

























The Victoria History of the  
Counties of England

EDITED BY WILLIAM PAGE, F.S.A.

A HISTORY OF  
DURHAM

VOLUME I







THE  
VICTORIA HISTORY  
OF THE COUNTIES  
OF ENGLAND  
DURHAM



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## GENERAL ADVERTISEMENT

THE VICTORIA HISTORY of the Counties of England is a National Historic Survey which, under the direction of a large staff comprising the foremost students in science, history, and archæology, is designed to record the history of every county of England in detail. This work was, by gracious permission, dedicated to Her late Majesty Queen Victoria, who gave it her own name. It is the endeavour of all who are associated with the undertaking to make it a worthy and permanent monument to her memory.

Rich as every county of England is in materials for local history, there has hitherto been no attempt made to bring all these materials together into a coherent form.

Although from the seventeenth century down to quite recent times numerous county histories have been issued, they are very unequal in merit; the best of them are very rare and costly; most of them are imperfect and many are now out of date. Moreover, they were the work of one or two isolated scholars, who, however scholarly, could not possibly deal adequately with all the varied subjects which go to the making of a county history.

In the VICTORIA HISTORY each county is not the labour of one or two men, but of many, for the work is treated scientifically, and in order to embody in it all that modern scholarship can contribute, a system of co-operation between experts and local students is applied, whereby the history acquires a completeness and definite authority hitherto lacking in similar undertakings.

The names of the distinguished men who have joined the Advisory Council are a guarantee that the work represents the results of the latest discoveries in every department of research, for the trend of modern thought insists upon the intelligent study of the past and of the social, institutional, and political developments of national life. As these histories are the first in which this object has been kept in view, and modern principles applied, it is hoped that they will form a work of reference no less indispensable to the student than welcome to the man of culture.

## THE SCOPE OF THE WORK

The history of each county is complete in itself, and in each case its story is told from the earliest times, commencing with the natural features and the flora and fauna. Thereafter follow the antiquities, pre-Roman, Roman, and post-Roman; ancient earthworks; a new translation and critical study of the Domesday Survey; articles on political, ecclesiastical, social, and economic history; architecture, arts, industries, sport, etc.; and topography. The greater part of each history is devoted to a detailed description and history of each parish, containing an account of the land and its owners from the Conquest to the present day. These manorial histories are compiled from original documents in the national collections and from private papers. A special feature is the wealth of illustrations afforded, for not only are buildings of interest pictured, but the coats of arms of past and present landowners are given.

## HISTORICAL RESEARCH

It has always been, and still is, a reproach that England, with a collection of public records greatly exceeding in extent and interest those of any other country in Europe, is yet far behind her neighbours in the study of the genesis and growth of her national and local institutions. Few Englishmen are probably aware that the national and local archives contain for a period of 800 years in an almost unbroken chain of evidence, not only the political, ecclesiastical, and constitutional history of the kingdom, but every detail of its financial and social progress and the history of the land and its successive owners from generation to generation. The neglect of our public and local records is no doubt largely due to the fact that their interest and value is known to but a small number of people, and this again is directly attributable to the absence in this country of any endowment for historical research. The government of this country has too often left to private enterprise work which our continental neighbours entrust to a government department. It is not surprising, therefore, to find that although an immense amount of work has been done by individual effort, the entire absence of organization among the workers and the lack of intelligent direction has hitherto robbed the results of much of their value.

In the VICTORIA HISTORY, for the first time, a serious attempt is made to utilize our national and local muniments to the best advantage by carefully organizing and supervising the researches required. Under the direction of the Records Committee a large staff of experts has been engaged at the Public Record Office in calendaring those classes of records which are fruitful in material for local history, and by a system of interchange of communication among workers under the direct supervision of the general editor and sub-editors a mass of information is sorted and assigned to its correct place, which would otherwise be impossible.

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## CARTOGRAPHY

In addition to a general map in several sections, each History contains Geological, Orographical, Botanical, Archæological, and Domesday maps; also maps illustrating the articles on Ecclesiastical and Political Histories, and the sections dealing with Topography. The Series contains many hundreds of maps in all.

## ARCHITECTURE

A special feature in connexion with the Architecture is a series of ground plans, many of them coloured, showing the architectural history of castles, cathedrals, abbeys, and other monastic foundations.

In order to secure the greatest possible accuracy, the descriptions of the Architecture, ecclesiastical, military, and domestic, are under the supervision of Mr. C. R. PEERS, M.A., F.S.A., and a committee has been formed of the following students of architectural history who are referred to as may be required concerning this department of the work :—

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The genealogical volumes contain the family history and detailed genealogies of such houses as had at the end of the nineteenth century seats and landed estates, having enjoyed the like in the male line since 1760, the first year of George III., together with an introductory section dealing with other principal families in each county.

The general plan of Contents and the names among others of those who are contributing articles and giving assistance are as follows :—

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THE  
VICTORIA HISTORY  
OF THE COUNTY OF  
DURHAM

EDITED BY  
WILLIAM PAGE, F.S.A.

VOLUME ONE



LONDON  
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## PREFACE

THE fact that the county of Durham was a palatinate, and therefore more than other counties a separate district, may be the reason why it has been peculiarly fortunate in having attracted men of culture and leisure to study its history seriously and enthusiastically. Although he never attempted anything in the form of a county history, George Allan, a solicitor of Darlington, during the latter half of the eighteenth century collected and added to the manuscripts which had been prepared by many earlier workers. This vast store of material he freely placed at the disposal of historical students, thus enabling them to give a thoroughness to their work which otherwise could not probably have been attained. It was by this means that William Hutchinson was able to write his *History and Antiquities of the County Palatine of Durham*, the first volume of which appeared in 1785. Hutchinson was a man of many parts, a lawyer, a politician, a playwright and a novelist, but his history is nevertheless good, and will compare favourably in a few points with that of his rival Surtees.

Without doubt, however, the principal historian of the county was Robert Surtees. From his boyhood Surtees was a student of history, and conceived the idea of writing a history of his native county while an undergraduate at Christ Church, Oxford. He retired to his family seat at Mainsforth in 1805, and there at the age of twenty-six began what became his life's work. But *The History and Antiquities of the County Palatine of Durham* was delayed on account of his health, and the first volume was not published till 1816. Beyond the care and accuracy which he gave to his task there is a quaint humour in his style of writing, unusual in works of this nature, which adds a charm to what otherwise might often prove dry reading. The attraction of this quaint humour, exhibited as well in conversation as in writing, together with a generous disposition, surrounded him with those congenial companions and devoted friends who may be said to have founded a school of local historical research which has attained a standard that has never been reached elsewhere in this country. Among those influenced by this movement occur the names of Rev. James Raine, Canon Raine, his son, J. Hodgson Hinde, Sir Cuthbert Sharpe, W. H. D. Longstaff, Canon Greenwell, and Canon Fowler. Surtees died in February, 1834, leaving the fourth volume of his history, which remained unpublished till 1840, to be completed by his colleague, Rev. James Raine. Within a few months of his death the Surtees Society, which has done so much to

## PREFACE

elucidate the history of the north of England, was founded as a memorial to him. The prime mover in the formation of this Society was Rev. James Raine, D.C.L., author of *The History and Antiquities of North Durham*, a most scholarly work relating to the detached parts of Durham locally situated in Northumberland, the first part of which was issued in 1830, and the second in 1852. Raine was a man of great learning and indefatigable industry, to whose works all historians of the north of England are indebted. With such rivals as these it seems bold to compete, but it may perhaps be claimed that the aims of the Victoria County History differ in many respects from those of the existing county histories.

The editor desires to express his thanks to Rev. Canon Greenwell, for valuable advice and assistance ; to Rev. Dr. Gee, for help in many ways ; to Dr. Kitchin, Dean of Durham, for the use of plates ; and to the Society of Antiquaries of London, the Yorkshire Archæological Society, and the Surtees Society, for the use of blocks for illustrations.



## TABLE OF ABBREVIATIONS

Abbrev. Plac. (Rec. Com.)	Abbreviatio Placitorum (Record Commission)	Chartul. . . . .	Chartulary
Acts of P.C. . . . .	Acts of Privy Council	Chas. . . . .	Charles
Add. . . . .	Additional	Ches. . . . .	Cheshire
Add. Chart. . . . .	Additional Charters	Chest. . . . .	Chester
Admir. . . . .	Admiralty	Ch. Gds. (Exch. K.R.) . . . . .	Church Goods (Exchequer King's Remembrancer)
Agarde . . . . .	Agarde's Indices	Chich. . . . .	Chichester
Anct. Corresp. . . . .	Ancient Correspondence	Chron. . . . .	Chronicle, Chronica, etc.
Anct. D. (P.R.O.) A 2420	Ancient Deeds (Public Record Office) A 2420	Close . . . . .	Close Roll
Ann. Mon. . . . .	Annales Monastici	Co. . . . .	County
Antiq. . . . .	Antiquarian or Antiquaries	Colch. . . . .	Colchester
App. . . . .	Appendix	Coll. . . . .	Collections
Arch. . . . .	Archæologia or Archæological	Com. . . . .	Commission
Arch. Cant. . . . .	Archæologia Cantiana	Com. Pleas . . . . .	Common Pleas
Archd. Rec. . . . .	Archdeacons' Records	Conf. R. . . . .	Confirmation Rolls
Archit. . . . .	Architectural	Co. Plac. . . . .	County Placita
Assize R. . . . .	Assize Rolls	Cornw. . . . .	Cornwall
Aud. Off. . . . .	Audit Office	Corp. . . . .	Corporation
Aug. Off. . . . .	Augmentation Office	Cott. . . . .	Cotton or Cottonian
Aylofffe . . . . .	Aylofffe's Calendars	Ct. R. . . . .	Court Rolls
		Ct. of Wards . . . . .	Court of Wards
		Cumb. . . . .	Cumberland
		Cur. Reg. . . . .	Curia Regis
Bed. . . . .	Bedford	D. . . . .	Deed or Deeds
Beds. . . . .	Bedfordshire	D. and C. . . . .	Dean and Chapter
Berks . . . . .	Berkshire	De Banc. R. . . . .	De Banco Rolls
Bdle. . . . .	Bundle	Dec. and Ord. . . . .	Decrees and Orders
B.M. . . . .	British Museum	Dep. Keeper's Rep. . . . .	Deputy Keeper's Reports
Bodl. Lib. . . . .	Bodley's Library	Derb. . . . .	Derbyshire or Derby
Boro. . . . .	Borough	Devon . . . . .	Devonshire
Brev. Reg. . . . .	Brevia Regia	Dioc. . . . .	Diocese
Brit. . . . .	Britain, British, Britannia, etc.	Doc. . . . .	Documents
Buck. . . . .	Buckingham	Dods. MSS. . . . .	Dodsworth MSS.
Bucks . . . . .	Buckinghamshire	Dom. Bk. . . . .	Domesday Book
		Dors. . . . .	Dorsetshire
Cal. . . . .	Calendar	Duchy of Lanc. . . . .	Duchy of Lancaster
Camb. . . . .	Cambridgeshire or Cambridge	Dur. . . . .	Durham
Cambr. . . . .	Cambria, Cambrian, Cambrensis, etc.		
Campb. Ch. . . . .	Campbell Charities	East. . . . .	Easter Term
Cant. . . . .	Canterbury	Eccl. . . . .	Ecclesiastical
Cap. . . . .	Chapter	Eccl. Com. . . . .	Ecclesiastical Commission
Carl. . . . .	Carlisle	Edw. . . . .	Edward
Cart. Antiq. R. . . . .	Cartæ Antiquæ Rolls	Eliz. . . . .	Elizabeth
C.C.C. Camb. . . . .	Corpus Christi College, Cambridge	Engl. . . . .	England or English
Certiorari Bdles. (Rolls Chap.)	Certiorari Bundles (Rolls Chapel)	Engl. Hist. Rev. . . . .	English Historical Review
Chan. Enr. Decree R.	Chancery Enrolled Decree Rolls	Enr. . . . .	Enrolled or Enrolment
Chan. Proc. . . . .	Chancery Proceedings	Epis. Reg. . . . .	Episcopal Registers
Chant. Cert. . . . .	Chantry Certificates (or Certificates of Colleges and Chantries)	Esch. Enr. Accts. . . . .	Escheators Enrolled Accounts
Chap. Ho. . . . .	Chapter House	Excerptæ e Rot. Fin. (Rec. Com.)	Excerpta e Rotulis Finium (Record Commission)
Charity Inq. . . . .	Charity Inquisitions	Exch. Dep. . . . .	Exchequer Depositions
Chart. R. 20 Hen. III. pt. i. No. 10	Charter Roll, 20 Henry III. part i. Number 10	Exch. K.B. . . . .	Exchequer King's Bench
		Exch. K.R. . . . .	Exchequer King's Remembrancer
		Exch. L.T.R. . . . .	Exchequer Lord Treasurer's Remembrancer

## TABLE OF ABBREVIATIONS

Exch. of Pleas, Plea R.	Exchequer of Pleas, Plea Roll	Memo. R. . . . .	Memoranda Rolls
Exch. of Receipt .	Exchequer of Receipt	Mich. . . . .	Michaelmas Term
Exch. Spec. Com. .	Exchequer Special Commis- sions	Midd. . . . .	Middlesex
		Mins. Accts. . .	Ministers' Accounts
		Misc. Bks. (Exch. K.R., Exch. T.R. or Aug. Off.)	Miscellaneous Book (Ex- chequer King's Remem- brancer, Exchequer Trea- sury of Receipt or Aug- mentation Office)
Feet of F. . . . .	Feet of Fines	Mon. . . . .	Monastery, Monasticon
Feod. Accts. (Ct. of Wards)	Feodaries Accounts (Court of Wards)	Monm. . . . .	Monmouth
Feod. Surv. (Ct. of Wards)	Feodaries Surveys (Court of Wards)	Mun. . . . .	Muniments or Munimenta
Feud. Aids . . . .	Feudal Aids	Mus. . . . .	Museum
fol. . . . .	Folio		
Foreign R. . . . .	Foreign Rolls	N. and Q. . . .	Notes and Queries
Forest Proc. . . .	Forest Proceedings	Norf. . . . .	Norfolk
		Northampt. . .	Northampton
Gaz. . . . .	Gazette or Gazetteer	Northants . . .	Northamptonshire
Gen. . . . .	Genealogical, Genealogica, etc.	Northumb. . . .	Northumberland
Geo. . . . .	George	Norw. . . . .	Norwich
Glouc. . . . .	Gloucestershire or Gloucester	Nott. . . . .	Nottinghamshire or Notting- ham
Guild Certif.(Chan.)	Guild Certificates (Chancery)	N.S. . . . .	New Style
Ric. II.	Richard II.		
Hants . . . . .	Hampshire	Off. . . . .	Office
Harl. . . . .	Harley or Harleian	Orig. R. . . . .	Originalia Rolls
Hen. . . . .	Henry	O.S. . . . .	Ordnance Survey
Heref. . . . .	Herefordshire or Hereford	Oxf. . . . .	Oxfordshire or Oxford
Hertf. . . . .	Hertford		
Herts . . . . .	Hertfordshire	p. . . . .	Page
Hil. . . . .	Hilary Term	Palmer's Ind. . .	Palmer's Indices
Hist. . . . .	History, Historical, Historian, Historia, etc.	Pal. of Chest. . .	Palatinate of Chester
Hist. MSS. Com. .	Historical MSS. Commission	Pal. of Dur. . . .	Palatinate of Durham
Hosp. . . . .	Hospital	Pal. of Lanc. . .	Palatinate of Lancaster
Hund. R. . . . .	Hundred Rolls	Par. . . . .	Parish, parochial, etc.
Hunt. . . . .	Huntingdon	Parl. . . . .	Parliament or Parliamentary
Hunts . . . . .	Huntingdonshire	Parl. R. . . . .	Parliament Rolls
		Parl. Surv. . . .	Parliamentary Surveys
Inq. a.q.d. . . . .	Inquisitions ad quod damnum	Partic. for Gts. .	Particulars for Grants
Inq. p.m. . . . .	Inquisitions post mortem	Pat. . . . .	Patent Roll or Letters Patent
Inst. . . . .	Institute or Institution	P.C.C. . . . .	Prerogative Court of Canter- bury
Invent. . . . .	Inventory or Inventories	Pet. . . . .	Petition
Ips. . . . .	Ipswich	Peterb. . . . .	Peterborough
Itin. . . . .	Itinerary	Phil. . . . .	Philip
Jas. . . . .	James	Pipe R. . . . .	Pipe Roll
Journ. . . . .	Journal	Plea R. . . . .	Plea Rolls
Lamb. Lib. . . . .	Lambeth Library	Pop. Ret. . . . .	Population Returns
Lanc. . . . .	Lancashire or Lancaster	Pope Nich. Tax. (Rec. Com.)	Pope Nicholas' Taxation (Re- cord Commission)
L. and P. Hen. VIII.	Letters and Papers, Hen. VIII.	P.R.O. . . . .	Public Record Office
Lansd. . . . .	Lansdowne	Proc. . . . .	Proceedings
Ld. Rev. Rec. . . .	Land Revenue Records	Proc. Soc. Antiq. .	Proceedings of the Society of Antiquaries
Leic. . . . .	Leicestershire or Leicester	pt. . . . .	Part
Le Neve's Ind. . .	Le Neve's Indices	Pub. . . . .	Publications
Lib. . . . .	Library		
Lich. . . . .	Lichfield	R. . . . .	Roll
Linc. . . . .	Lincolnshire or Lincoln	Rec. . . . .	Records
Lond. . . . .	London	Recov. R. . . . .	Recovery Rolls
		Rentals and Surv. .	Rentals and Surveys
		Rep. . . . .	Report
		Rev. . . . .	Review
		Ric. . . . .	Richard

# TABLE OF ABBREVIATIONS

Roff. . . . .	Rochester diocese	Topog. . . . .	Topography or Topographi- cal
Rot. Cur. Reg. .	Rotuli Curiae Regis	Trans. . . . .	Transactions
Rut. . . . .	Rutland	Transl. . . . .	Translation
		Treas. . . . .	Treasury or Treasurer
		Trin. . . . .	Trinity Term
Sarum . . . . .	Salisbury diocese		
Ser. . . . .	Series	Univ. . . . .	University
Sess. R. . . . .	Sessions Rolls		
Shrews. . . . .	Shrewsbury	Valor Eccl. (Rec. Com.)	Valor Ecclesiasticus (Record Commission)
Shrops . . . . .	Shropshire	Vet. Mon. . . . .	Vetusta Monumenta
Soc. . . . .	Society	V.C.H. . . . .	Victoria County History
Soc. Antiq. . . .	Society of Antiquaries	Vic. . . . .	Victoria
Somers. . . . .	Somerset	vol. . . . .	Volume
Somers. Ho. . . .	Somerset House		
S.P. Dom. . . . .	State Papers Domestic	Warw. . . . .	Warwickshire or Warwick
Staff. . . . .	Staffordshire	Westm. . . . .	Westminster
Star Chamb. Proc.	Star Chamber Proceedings	Westmld. . . . .	Westmorland
Stat. . . . .	Statute	Will. . . . .	William
Steph. . . . .	Stephen	Wilts . . . . .	Wiltshire
Subs. R. . . . .	Subsidy Rolls	Winton. . . . .	Winchester diocese
Suff. . . . .	Suffolk	Worc. . . . .	Worcestershire or Worcester
Surr. . . . .	Surrey		
Suss. . . . .	Sussex	Yorks . . . . .	Yorkshire
Surv. of Ch. Liv- ings (Lamb.) or (Chan.)	Surveys of Church Livings (Lambeth) or (Chancery)		





A HISTORY OF  
DURHAM

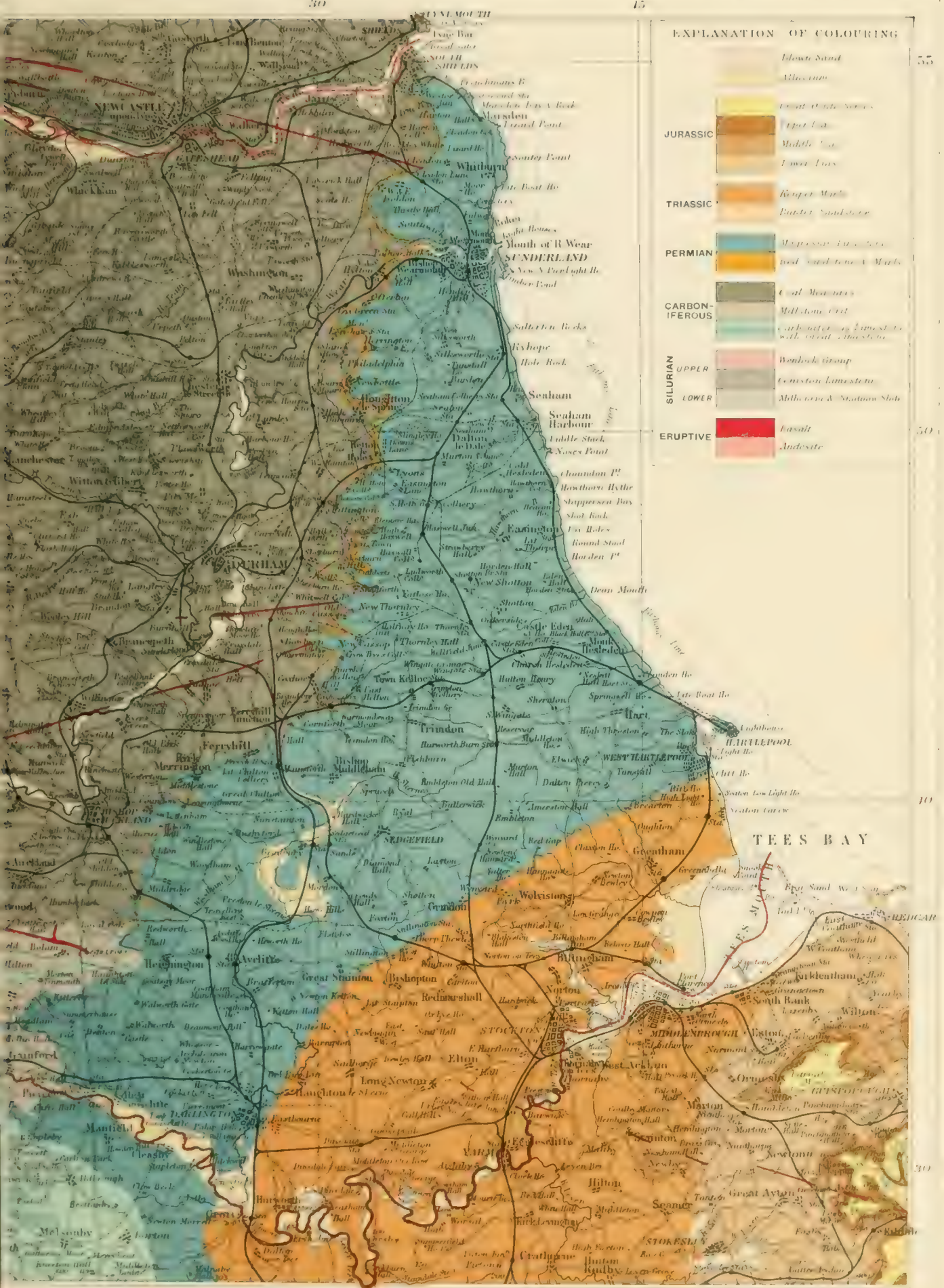
















# GEOLOGY

FROM the mouth of the Tyne to that of the Tees the county of Durham is bounded by the sea, and the long coast-line is for the most part one of fine and instructive cliff-sections. This coast-line forms the broad base of the rough triangle in which the county is shaped. The apex of this triangle is situated among the high hills of the Pennine range to the west not far from Cross Fell. From this point the northern boundary follows generally the valleys of the Derwent, Stanley Burn and the Lower Tyne ; and the southern limit is practically the River Tees from Crook Burn, near Caldron Snout, to the sea. From the Pennine highlands to the coast about midway between Tyne and Tees the valley of the Wear, somewhat irregular in its trend, divides the entire area into two fairly equal portions, one northern and one southern, whilst the tributaries of the three main rivers, most of them deeply sculpturing the surface, afford numberless exposures by means of which an insight into the rocky structure of the region may be readily gained. Here, as elsewhere, it is this structure which has determined the main topographical features. Thus the highest ground, to the west, consists of the hard rocks of the Lower Carboniferous Series, the comparatively low ground between Gateshead and the Aucklands is occupied by the outcrops of the less resisting Coal Measures, and the bold, though not very high, undulating country which fringes the coast as far south as the Hartlepoons is due to the remarkable development of the Permian Magnesian Limestone in that district. The low, red-soiled country between Darlington and Seaton Carew owes its soft outlines and striking colour to the easily crumbled salt-bearing strata of the Upper Permian and Trias.

There are thus four topographical and geological regions in Durham equally distinct as to surface features and vegetation, as to their stratigraphical constituents, and, one may add, also as to the chief occupations which are followed within them. They may be briefly defined as follows :—

A. The *Lower Carboniferous Region*, including the upper vale of Derwent as far as Shotley Bridge, Weardale as far as Witton-le-Wear, and Teesdale as far as Piercebridge. This is the lead mining country.

B. The *Coal Measure Region*, including the lower portion of the Derwent Valley, the whole of the Team Valley, and the valley of the Wear from Witton-le-Wear, past Durham and Chester-le-Street to Claxheugh. This is the chief coal district.

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C. The *Magnesian Limestone Region*, between the last-named and the sea and bounded on the south by an ill-defined line curving from a little west of Darlington to the Hartlepoons. Until about the middle of last century this was a purely pastoral district, but now many collieries have been opened out in it.

D. The *Red Region*, between the Lower Tees and the Magnesian Limestone Region. This is the salt district.

TABLE OF STRATA IN DURHAM

Period	Formation	Character of Material	Approximate thickness in feet
Recent	River Alluvium, Peat . . . .	Mud, silt, gravel, peat: bordering streams and in hollows (old lakes) . . . . .	up to 30
	Marine Alluvium . . . . .	Shingle, beach sand, blowing sand, mud . . . . .	up to 50
Pleistocene (Drift)	Old River Drift . . . . .	Gravel, sand, loam, clay, etc., of ancient river terraces . .	up to 50
	Old Marine Alluvium . . . .	Raised beaches . . . . .	up to 30
	Later Glacial Deposits . . . .	Gravel, sand, 'leafy' clays, cave-earth (?) . . . . .	up to 250
	Older Glacial Deposits . . . .	Boulder clay, some rare thin sands and gravels . . . . .	up to 200
Salt-Measures (Trias above, Upper Permian below)	Keuper Red Sandstones and Marls passing downwards into similar Permian Sandstones, etc.	Mostly red rocks with deposits of rock salt, gypsum, anhydrite, and thin magnesian limestones towards the base	up to 1,200
Permian	Magnesian Limestone . . . .	Often concretionary . . . .	up to 800
	Marl Slate . . . . .	Flaggy calcareous beds with fish remains . . . . .	up to 15 (usually 3)
	Yellow Sands ('Quicksands') .	Generally yellow but sometimes dark-coloured, more or less incoherent, water-bearing sandstones . . . . .	up to 104
Carboniferous	Coal Measures: down to the Hutton Seam inclusive	Sandstones, shales, coals and fire-clays . . . . .	} together up to 5,500
	Coal Measures: down to the Brockwell Seam inclusive	Sandstone, shales, coals and fire-clays . . . . .	
	Lower Coal Measures or Gannister Beds. Millstone Grit	Sandstones, shales, few coals, occasionally beds of 'gannister,' sandstones, shales, rare coals	
	Bernician or Carboniferous Limestone Series	Sandstones, shales, fire-clays, a few thin coals, limestones .	} variable
	Basement beds (so-called) . .	Coarse breccia . . . . .	
Silurian	Exact horizon unknown (Stockdale Shales [?]) .	'Slate-pencil' Shales . . . .	thickness unknown

The scenery of these regions is as characteristic in each case as the industry which each supports, and will be noted under separate heads

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later. Here it will suffice to say that A is a treeless moorland tract in which bogs and crags abound, B an area of wooded and, here and there, gorge-like valleys or 'denes' with good open arable land between them, C a broad zone of grass-covered billowy down-like ground bounded by a marked rounded scarp on its western side and by bold sea-cliffs to the east, and D a thick-soiled ruddy quarter devoid of striking features.

It is needless to add that both A and B, and in a minor degree C also, are now much disfigured by the mining operations which have been for so long a time carried on within their limits.

### SILURIAN SYSTEM

The most ancient deposits to be seen in the county probably, but by no means certainly, belong to the Stockdale Shale group of the Silurian System. Only the upturned edges of these beds are visible, and that too only in a very small inlier laid bare by the erosive action of the Upper Tees close to the fine basaltic crags of Cronkley Scar, above the High Force, at the old Pencil Mill. Long ago the late Professor John Phillips had noticed these rocks and had noted their resemblance to the 'Grauwacke' of the older Palæozoic formations, but without assigning any geological date to them.<sup>1</sup> It was not however till 1875 that the exposure was carefully studied by Messrs. Gunn, Clough and Dakyns, and the approximate age of the strata ascertained.<sup>2</sup> The natives had for centuries used the soft clay-slate of which the beds consist for slate-pencils, and the name of the old mill standing by the river at the point of their outcrop testifies to this. The uptilted position of the layers and their denudation before the deposition of the lowest over-lying Carboniferous material sufficiently prove the pre-Carboniferous age of the pencil beds; their lithological characters are those of the Stockdale Shales as they occur in the Lake District. Some dykes of mica-trap (minette) accompany them here as in their typical area of development, and so far give confirmatory (though in the absence of fossils still inconclusive) evidence as to their age.

### CARBONIFEROUS SYSTEM

There are no Old Red Sandstone or Devonian rocks cropping out in the county. The feebly developed brecciated deposits which occur at and towards the base of the Carboniferous Series in the Pencil Mill inlier already mentioned do not even represent the true basement beds of the system, since they are merely the fragmental shore accumulations of a portion of the Lower Carboniferous considerably younger and higher than the oldest and lowest horizon of that period. This is a point not always clearly understood. There is a base to the Carboniferous in Durham but it is not *the* base of the system. Of anything corresponding to and truly contemporaneous with the chocolate-coloured breccias which occur in pockets on the face of the Pennine escarpment not

<sup>1</sup> *Illustrations of the Geology of Yorkshire*, pt. 2, 1836, p. 78.

<sup>2</sup> *Quart. Journ. Geol. Soc.* xxxiv. and *Geol. Mag.* (December 11), iv. 58, 59, 139, 140.



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many miles to the west in Westmorland and Cumberland, between the regularly bedded Roman Fell Series (Lower Carboniferous, beneath the Scar Limestone Series) and the denuded older Palæozoic rocks, there is here no trace. The Ordovician and Silurian rocks on which the Carboniferous were deposited stood out as islands during the earliest Carboniferous times, and pseudo-basal beach formations were formed at several horizons at various stages in the gradual submergence and burying of the ancient sea-floor. It is some of these old shingle beaches which have, naturally enough, been not unfrequently regarded as basement beds.

Neither is the series of flaggy sandstones and quartzose conglomerates known on the Pennine escarpment as the Roman Fell Series continued into Durham. This thick set of beds thins away very rapidly to the east, and wedges out before reaching the western boundaries of the county.

From the lowest known Durham Carboniferous stratum to the Millstone Grit division, the rocks exhibit the remarkable characters of the Bernician Series. They consist of oft-repeated alternations of grits, sandstones, shales, fire-clays and limestones, with a few (far fewer than in Northumberland, though more than in Yorkshire) thin and generally inconstant coal seams of small commercial value. The nature of the series is in fact intermediate between that of the Lower Carboniferous rocks of Derbyshire and Yorkshire and that of the corresponding set of strata in Northumberland and Scotland. There are here no huge thicknesses of limestone such as obtain in this stratigraphical division further south, thicknesses which there fully justify the term 'Mountain Limestone' so often applied to it, a term quite inapplicable to the thin layers of calcareous rock which represent them in Durham. On the other hand the number of limestone beds is rather smaller and their individual thickness rather greater (not their total thickness) than in Northumberland. Indeed the entire group so closely resembles that upper portion of the Carboniferous Limestone Series which, as it is represented in the Yorkshire dales, goes by the name of 'Yoredale Rocks' that the Geological Survey have used that term to denote the whole of the Lower Carboniferous strata of Durham beneath the Millstone Grit. This is somewhat unfortunate, since only the upper portion of these beds really corresponds to the typical Yoredales, the lower portion representing the massive Scar limestones which form the base of Ingleborough, Pen-y-ghent, and the other great hills of the West Riding. The thickness of the whole in Durham varies from about 1,100 to 1,250 feet, the series thickening gradually towards the north and north-west, until in some parts of Northumberland it attains the enormous thickness of 8,000 feet or, in places, even more. It is to be noted that with increased total thickness in the direction stated there coincides an increase in number of both limestones and coals, the former thinner, as a rule, than in Durham, but the latter thicker and much more constant—so much so indeed as, in Northumberland and in a still greater degree in



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Scotland, to give the value of a workable coalfield to the area occupied by the Carboniferous Limestone or Bernician Series.

Although, as has been explained above, all the lower beds of this important division are not to be seen cropping out at the surface in the county, yet all have been proved within its boundaries by mining operations. Long before geologists had begun to survey the district scientifically the lead-miners had become familiar with every stratum between the Millstone Grit and the floor of denuded Silurian and Ordovician rocks. To each stratum a name had been given by them, and the changing characters which they displayed from place to place had been carefully observed and often recorded in the plans and sections connected with the mines. It is to these early lead-miners, and more especially to Mr. Westgarth Forster, who in 1817 gathered their observations and his own in a complete and singularly able treatise, that we owe our first knowledge of these strata.<sup>1</sup> About 120 well marked beds or sets of beds are recognizable in the series, and have been measured over and over again in countless shafts and levels. The best known and most characteristic of these may now be enumerated, beginning with the lowest and denoting them by the numbers used in Forster's classical section. Before proceeding, however, it will be well to state that special prominence is given to the limestone beds, because, though by no means the thickest, they are much the most constant and serve as datum lines of great value in correlating the deposits present in one shaft or region with those found in another. Besides it is in the limestone layers that the lead veins have as a rule been found to be richest in ore.

No. 217. *The Melmerby Scar Limestone*.—This, the thickest limestone in the county, on an average 132 feet thick, comes nowhere within it to the surface. It has been proved in several mine-shafts however. It is the nearest approach to the true 'Mountain Limestone' type to be found in Durham, but being only known underground it cannot form 'mountains' in any true sense. Miners frequently call this mass of limestone 'the Great Limestone,' but as that name is given more generally to another much better known horizon considerably higher up this practice should not be adopted. This thick limestone is not continued as a separate bed into Northumberland, but is there represented by shales and sandstones, and even by a few thin seams of coal with occasional thin bands of limestone only.

After a small interval of shale and sandstone comes

No. 214. *Robinson's Lime*.—A limestone 20 or 21 feet thick.

More shale and sandstone of no great thickness separates this from

No. 208. *The Smiddy Limestone*.—About 31 feet thick or a few inches more at its maximum.

Shale and sandstone again, then

No. 204. *The Tenth or Little Limestone*.—The latter name may, as in the case above referred to, lead to some confusion, as another

<sup>1</sup> *Treatise of a Section of the Strata from Newcastle-upon-Tyne to the Mountains of Cross Fell in Cumberland*, by Westgarth Forster.

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higher and better known bed is usually also known as the Little Limestone. This one is about 18 feet thick.

Another group of shale and sandstone, then

No. 200. *The Ninth or Jew Limestone*.—Amongst the lead-miners an idea (without foundation in many cases) has long prevailed that profitable mining could not be carried on beneath this bed. Several of the most paying lead deposits have been worked to the west in lower strata. The Jew Limestone is about 24 feet thick.

Some eight or nine alternations of shale and sandstone occur beneath

No. 190. *The Tyne-bottom Limestone*.—This is one of the best known named limestones in the series, but the name has often been misapplied. This is due to the fact that over a considerable tract of country the bed properly so called lies next above the great sheet of basalt known as the Great Whin Sill in the north of England and to the consequent inference—quite a mistaken one—that the first limestone above this intrusive and horizon-shifting mass of igneous rock must everywhere be the same. Many miners still refuse to regard the Whin Sill as intrusive because of the supposed constant position (as they think) of the Tyne-bottom Limestone above it, arguing in a vicious circle thus: The Tyne-bottom Limestone is next above the Whin Sill at A, the limestone lying upon the Whin Sill at B or C must therefore be the Tyne-bottom Limestone also, and the Whin Sill has therefore not changed its horizon and is not intrusive. An instructive example of bad logic and worse geology. That the lower courses of the limestone are commonly baked, and the shales which often lie between it and the basalt indurated into porcellanite or 'whetstone' by the heat of the once molten sheet, is evidence of intrusion which they do not take into consideration. For some four miles the river South Tyne runs upon this limestone, hence its name. In Durham it is one of the lowest of the Bernician limestones to crop out at the surface—'to the day,' as it is termed locally. It is usually about 24 feet thick. Shales and sandstones follow as usual, then comes

No. 186. *The Eighth or Single Post Limestone*.—This is a thin but very constant bed, about 6 feet in thickness only. Single Post means single *course*, i.e. the bed consists of one layer or course of limestone, most of the thicker limestones comprising several posts individually seldom so thick as this. The word 'post,' as met with in records of mining sections, more often means 'sandstone,' the latter word being in practice very commonly omitted from the full description which should be Sandstone Post or Freestone Post = Sandstone Bed or Course.

Next come shale and sandstone, then

No. 181. *The Cockle-shell Limestone*.—A still thinner but well-known bed, seldom exceeding 3 feet in thickness. It is usually full of *Productus giganteus*, the 'cockle-shell' of the miners, but though it takes its name from this circumstance it must not be supposed that this fossil is in any degree specially characteristic of this horizon. It is



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found in varying abundance in every one of the limestone beds enumerated.

The usual shale and sandstone interval is succeeded by

No. 169. *The Sixth or Scar Limestone*.—This must not be confounded with the previously described No. 217, which sometimes is also known as the 'Scar Limestone,' the qualifying word 'Melmerby' being omitted. It is an important horizon in the lead measures, since many of the richest ore-deposits have been found associated with it. There are within it three thin bands of shale (locally 'famp' in the lead districts only) which separate the limestone into three posts or courses. As lead veins of small faulting capacity traverse this bed, the ore is apt to extend in great horizontal lateral masses along the 'famp' partings and to form those exceedingly valuable masses of ore known amongst the lead-miners as 'flats.' Though only about 30 feet thick this limestone has in many a mine yielded not only a thick vertical main vein but a 'high,' a 'middle' and a 'low' flat of thick ore of great value in the days before Free Trade.

More shale and sandstone, and then

No. 166. *The Fifth or Five-Yard Limestone*.—Notwithstanding its name, this bed is only 7 or 8 feet thick, and is not very constant at that.

Shale and sandstone as before, then

No. 162. *The Fourth or Three-Yard Limestone*.—True to its name this bed is generally about 12 feet thick.

Shale and sandstone, with usually a good deal of clay ironstone (formerly worked before foreign iron ore was imported on a large scale) associated with the shale, then

No. 160. *The Four-Fathom Limestone*.—This bed again justifies its name, being about 24 feet thick on an average. Although not restricted to this horizon, yet the large Foraminifer *Saccamina carteri* occurs in such special abundance in it that the limestone is often spoken of as the 'Saccamina Limestone.' Long before the nature of the fossil was recognized by the late Dr. H. B. Brady the miners and quarrymen knew the band in the stone which is made up of the little spindle-shaped tests as the 'spotted post,' though it must be added that they sometimes gave the same name to certain portions of other limestones with 'spots'—or sections—due to other fossils, especially corals of the genera *Lithostrotion* and *Syringopora* transversely cut. The Four-Fathom and the other limestones above it are among those which are most obvious and 'feature-making' in the upper dales of the Tees and Wear. They appear as long continuous short-grass covered zones running across the country and contrasting strikingly with the ranker vegetation on the shales and sandstones between them. Sheep congregate specially on these deep green bands; houses, where possible, are built on them, and when the snow melts it is from them that it is first completely cleared—a hint to house-builders and others that the conductivity for heat of a rock is not an element to be neglected in selecting building sites.

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Shales, sandstones (often including a specially thick set of beds) and a thin 3 foot thick limestone, No. 156, known as *The Small Limestone* and very constant, bring us to

No. 153. *The Great or Main Limestone*, the thickest (about 72 feet thick) and by far the most important of the higher (or true 'Yoredale') limestones of the Bernician Series. As an ore-bearing horizon it is second to none, and the same may be said of it as regards quarrying. For centuries a large population has been supported by the work necessitated by it, specially in the Stanhope district of Weardale. Between Wolsingham and Frosterley this great calcareous formation is to be seen dipping beneath the bed of the Wear, and its outcrop can be followed thence for miles, forming a clear feature dotted with quarries as far as the eye can reach both to the north and to the south. Considering the extreme variability of most of the beds of limestone from the midlands northwards the regular constancy of this horizon is remarkable. It can be traced with certainty from west Yorkshire to north Northumberland, and even, if recent correlations be accepted, to the central valley of Scotland between the Forth and the Clyde. Its thickness is greatest in the Durham area, from which it thins away south, west and north. Whether it thickens or thins to the east it is not yet possible to say, though the Chopwell boring, which will be referred to again further on, seems to show that it will prove to thin away in that direction likewise. Naturally so thick a limestone is made up of many layers, and to these names have of course been given by the generations of quarrymen who have been engaged in destroying them. The names adopted in the Frosterley quarries are quaint and sometimes descriptive. They are perhaps worth citing. They are as follows, in ascending order :—

(1) THE BOTTOM POST. This layer is frequently entirely made up of the fossil Monticuliporid coral *Chætetes hyperboreus*.

(2) THE NEWCASTLE POST.

(3) THE JACK POST.

(4) THE YARD POST.

(5) WHALEY.

(6) STIFF DICK.

(7) DUN JIM.

(8) DUN KIT'S BASTARD. It may be noted that the term 'bastard' in the sense of inferior or impure is common in the north in connexion with workable stone.

(9) THE DUN KIT POST.

(10) THE FIVE THIN POSTS.

(11) THE BLACK BEDS. It is in this part of the Great Limestone that the rich 'middle' flat of lead ore occurs.

(12) THE TOMS or TWEE TOMS.

(13) THE THICK COCKLE POST.

(14) THE THIN COCKLE POST. These two fossiliferous courses are perhaps the most valuable of the whole mass. One of them is full



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of large horn-shaped corals of the *Glisiophyllum* type, and the other is equally full of *Productus giganteus*, the largest of Brachiopod shells. These layers are quarried, where the fossils are most crowded, for ornamental purposes, as the stone takes a good polish, and many are the churches and other public buildings throughout the kingdom in which the Stanhope and Frosterley marbles, as they are called, display their beautifully preserved organic remains from the old Upper Bernician or Yoredale sea.

(15) **ELSIE.**

(16) **ROSE-MARY, or THE PEA POST.** This layer is a mass of *Lithostrotion* corals in their original position of growth. The sections of the corallites are the 'peas.'

(17) **THE MUCKY POSTS.**

(18) **CRABBY.** A 'crabbed' or difficult stone to work.

(19) **TOBY GILES.** And finally

(20) **THE FINE POSTS.**

The topmost portion of the Great Limestone is often irregularly bedded, presenting the aspect of ellipsoidal blocks of stone with intervening calcareous shale. This appearance may be due to what Mr. J. G. Goodchild has called the 'dwindling' of the limestone, or its gradual decay under the effect of solvents. To this structure is no doubt owing the name of 'Tumbler Beds,' often given to this part of the formation, the word 'Tumbler' meaning 'boulder' in the local dialect. The extraordinary persistence of the Great Limestone makes it without exception the best and most convenient datum-line in the Lower Carboniferous deposits of the north of England.

Sandstones and shales, together with a very thin and by no means constant representative of what to the north and west is, under the name of *The Little Limestone Coal*, perhaps the most continuous seam of coal in Britain (as it certainly is the most constant of the Bernician seams, stretching from the northernmost portions of Northumberland to the Craven district), separate the *Great* from

No. 145. *The Little or Second Limestone.*—This is the Little Limestone proper referred to under No. 204. In it the lead veins have frequently been found to yield very abundant ore, but it is a thin and, in this county, not very regular bed.

Sandstones and shales, the last of these non-calcareous intervals, lead to

No. 121. *The Fell Top Limestone*, a still thinner and more variable limestone, sometimes duplicated by means of intercalated thin shales and sandstones, and sometimes absent altogether (though in that case usually represented by a calcareous shale full of ordinary limestone fossils, amongst which trilobites are common). This is the highest marine limestone in the Carboniferous Series of Durham; and although the Geological Survey, owing to the necessity of carrying on lines of division decided on further south, have been compelled to fix the upper boundary of the Limestone Series a little above this horizon, there is no such necessity

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here, and the Fell Top may well be taken as the obvious termination of the Carboniferous Limestone or Bernician, the shaly beds immediately following being grouped with the Millstone Grit.

Perhaps the most striking point in connexion with the Bernician Beds as developed in Durham is the marked disappearance of the coals which characterize them further to the north. This disappearance is not however complete. One seam (which sometimes is represented by two) has already been mentioned as occurring beneath No. 145, another is sometimes found beneath the *Fell Top Limestone* (No. 121), but of no value; and one beneath the *Scar Limestone* (No. 169). Indeed it is clear that the many Bernician seams which crop out in west Northumberland have a general tendency to thin away to the south-east, that is towards Durham. It is, of course, possible that there may be a re-crudescence of these seams beneath the Upper Carboniferous strata to the east, but nothing but actual boring to very considerable depths can prove whether this be so or not. Such rare borings bearing upon this point as have been put down recently are decidedly in favour of a negative answer to this question. One at Sherburn, which went some way beneath the Millstone Grit into the Upper Limestone horizons, struck upon no seam approaching a workable thickness. The same result was obtained by an extremely interesting and deeper boring put down in the Chopwell Woods on the banks of the Derwent, and described by Mr. J. B. Simpson in the 'Transactions of the North of England Institute of Mining and Mechanical Engineers in 1902.'<sup>1</sup>

### THE MILLSTONE GRIT AND COAL MEASURES

The middle division of the Carboniferous Series is a very marked and well individualized one in the midlands. On following it towards the north it loses much of its individuality, and this loss of specialization is accompanied by very considerable thinning. The coarse grits which form the fine bold escarpments or 'edges' of the Peak district of Derbyshire, or the silicious scars of west Yorkshire, have not disappeared altogether in Durham, but they have sadly dwindled both in coarseness of texture and in the relative importance which these beds bear to the rest of the strata associated with them. In fact the grits of the Millstone Grit in this county are scarcely in any way different from many of those of the Limestone Series below or of the Coal Measures above them. It is true that grits and sandstones are still the predominant rocks, and that the quartz grains of the grits are often found to have been augmented in size by the addition to each grain of crystallographically orientated secondary quartz. On the other hand the shales which intervene between the grits are absolutely identical with those of the great formations above and below, and no fossils have so far been met with which can be said to characterize the division palaeontologically. It may be

<sup>1</sup> Published in the *Transactions* of that Society in 1904. It appears from this boring that several limestone beds which, in south Northumberland, are intercalated between the *Great* and the *Little Limestone*, persist in north Durham, as indeed might well have been expected.



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asserted that had the Millstone Grit not been known and mapped in the more southern counties, its representatives in Durham (and still less in Northumberland) would probably not have been recognized as forming a separate stratigraphical group. They would no doubt have been regarded simply as a set of rather coarse, irregular and variable gritty sandstones, with some shales and one or two thin local coal-seams, forming the basal portion of the Coal Measures: as the introduction in fact to the huge non-marine set of strata to which the term Coal Measures is properly applied. However, as the division is generally recognized it is best to retain it, bearing in mind the want of special features which is its only noticeable, if negative, character. In Durham these beds, though nowhere more than 400 or 500 feet thick, and often much thinner, by reason of the orographical features of the country occupy a considerable area. The hills covered with heathery moorland, which rise between the deep dales dug out of the Bernician rocks, are capped with this debased Millstone Grit, and much of the wild crag, ling and peat scenery on these high grounds is due to the unyielding nature of these silicious deposits. It should be stated however that in most of the geological maps of this part of England published before the sheets of the Geological Survey the area coloured as Millstone Grit is very much exaggerated, partly owing to a real misconception as to the distribution of the strata, but partly also to the fact that the older geologists were in the habit of grouping a good deal of the Bernician Series (even including the Great Limestone in some cases) under the appellation Millstone Grit.

After what has been said above it will be readily understood that between the Millstone Grit and the overlying Coal Measures no violent break is to be expected in this county. Not only is this the case, but it can be truly said that none but a purely arbitrary and non-natural boundary can be drawn between the two. One can go still further than this and state that even such an arbitrary line of demarcation can scarcely be drawn with any confidence. Thus it has repeatedly happened that the writer has been called in by coal owners to decide whether in the bore holes which they had put down below the known workable coal seams of the Coal Measures the Millstone Grit had been reached or not, and he has been quite unable to give more than a tentative and generally a very doubtful opinion. There is in fact nothing but a perfect passage between the two, a passage unmarked by any datum line recognizable over any but the most limited areas. This difficulty is intensified by the entirely artificial divisions which, for mere convenience, have been usually accepted in classifying the Coal Measures. These divisions are, as regards the upper two, taken as including certain well-known coal seams, and for the practical purposes of the miner this is no doubt a useful arrangement. But the lowest division—known as the *Lower Coal Measures* or *Gannister Series*—though sufficiently limited at the top by this method of classification, lacks any similar means of fixing its bottom limit, as there are thereabouts no coal seams at all.

The *Lower Coal Measures* then (which must in no wise be con-

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founded with the beds grouped under that name in the Scottish coal-fields, which are equivalent to the Bernician Series) as usually accepted may be defined as comprising the 200 or 300 feet of strata which graduate upwards from the perfectly similar rocks of the Millstone Grit, and come to an end immediately beneath the well-known lowest continuous and valuable coal-seam known as the *Brockwell* or *Main Seam*, which is regarded as the bottom bed of the so-called Middle Coal Measures.

These strata consist of sandstones, shales and a few sometimes workable but never quite constant coal-seams, together with ordinary fire-clays accompanying such seams (or some of them), and a few beds, not very continuous, of that hard white, compact, root-traversed and highly silicious sandstone known as Gannister, and used for lining Bessemer converters, etc. This singular rock is certainly more prevalent in these beds than elsewhere in this region, but it is unfortunately by no means restricted to them, as is the case in the Lower Coal Measures of the Yorkshire and Lancashire coalfields for instance. Beds of the same stone, sometimes quite as typical, are occasionally found in the Bernician Series, where, here and there, they are even worked as Gannister, and also in the higher Coal Measures, though to a less extent. Thus this special deposit, though somewhat characteristic of the so-called Lower Coal Measures (sufficiently so to justify the name Gannister Series, sometimes applied to the division), can scarcely be used—especially as it occurs in non-continuous beds—as a criterion of solid value. Again in the more southern coalfields certain marine organisms of special types are found which are restricted to some horizons in the Lower Coal Measures and the Millstone Grit. This is not the case in Durham, though it is possible, indeed probable, that further investigation may to some extent put an end to this difficulty. This hope is held because in the adjoining county of Northumberland casts of some of these fossils have been found in these beds (in the neighbourhood of Stocksfield). More recently, in shale cores from a deep bore in the Coal Measures in the north-western portion of the Durham coalfield, from an horizon considerably below that of the Brockwell seam, and either in the Lower Coal Measures or in the upper portion of the Millstone Grit, the writer detected a small *Productus*, a *Discina* and some annelid tubes allied to *Serpulites*. These are of course marine fossils, but not specially of the kinds characteristic of the Gannister Series of Yorkshire or Lancashire.

The entire thickness of the Coal Measures is on the average something under 2,000 feet, but it must be remembered that denudation has removed an unknown series of beds from the upper portion and that the original thickness of the whole was certainly greater, and in all probability much greater than this.

Just as in the Lower Carboniferous rocks the limestones are the most persistent, and therefore, as datum lines, the most important beds, so in the Coal Measures the thicker coal-seams are the deposits most to be relied on in a survey of the strata. Insignificant individually as to



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thickness when compared with the enormous mass of rapidly alternating sandstones and shales with which they are interbedded, they are yet much more constant than any of these, and the accurate knowledge of them derived from the innumerable spots at which they are, or have been, worked throughout the coalfield gives them a commanding position as stratigraphical units such as no other deposits associated with them can claim. It is not necessary here to enter into the interesting, and at the present day rather controversial, question of the origin of coal generally, especially as the seams of Durham are most of them of a kind which does not give rise to much difference of opinion. With very few exceptions these seams, each provided with its regular seat-earth or 'under-clay'—which is also almost in every case a fire-clay—are obviously accumulations of vegetable matter in low-lying swampy flats of great area, and most of this vegetable matter is doubtless in its carbonized or coaly state much in the place where it grew and flourished when living; the under-clays in which the strange tree-roots known as *Stigmarie* are found quite undisturbed representing the soil beneath the heaped up decayed plant remains of the watery marsh. That these plants, some of them gigantic in size, were chiefly allied to the club-mosses, horse-tails and ferns of the present day is clear from the many well-preserved specimens which not the coals themselves but the shales and other beds accompanying the coals yield throughout the Coal Measures. The animal remains which are also, though less often, found tell the same tale. They are the exuviae of fishes whose rare recent allies inhabit fresh or at least estuarine waters, of alligator-shaped amphibia fitted for similar conditions, and of shells (chiefly bivalves) which apparently lived the life of our river and pond mussels. Occasionally some of the animal forms are consistent with existence in brackish waters, but instances of frankly marine forms such as those which obtain in the Carboniferous Limestone Series, though not absolutely unknown, are yet of great rarity, and suggest, when they do occur, brief episodes only during which quite occasional incursions of the sea may have invaded the delta-like swamps.

The Durham coals are almost all of the ordinary or so-called 'bituminous' type and furnish some of the best examples of household, coking and gas coals known. A few deposits of cannel coal occur, but they are all of very limited extent and small thickness. They moreover as a rule form part of the 'bituminous' seams, occurring usually towards the upper portions of such seams over small areas. Microscopic examination shows that these sporadic cannel beds (which sometimes are locally thick enough for working separately, and then yield gas of exceptional illuminating power) largely consist of minute freshwater algæ which lived, presumably, in shallow pools dotted here and there upon the surface of the forest swamps. True anthracite is not found in the county, though as a trade term the use of the word 'anthracitic' is not unknown in prospectuses describing coals with a somewhat smaller proportion of volatile matter than is usual in the common coals. Some-

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times also the altered coal met with near intrusive dykes or sheets of igneous rock is miscalled 'anthracite.'

It is a kind of impure stony coal, useless for industrial purposes, and locally known as 'cindered coal' (a good descriptive name), but it is in no sense anthracite. The amount of 'ash' or non-coaly mineral matter of the ordinary Durham coals is small in quantity—seldom indeed more than the percentage of silica which the tissues of the coal-making plants originally contained. In the cannel seams, especially towards their outer limits (i.e. near the edges of the ancient ponds), the amount of ash is often great, so much so that the cannels frequently pass laterally into shales (indurated and laminated mud). In the 'cindered coal' above referred to the percentage of ash is also very large, which would not be the case were these metamorphosed coals akin to true anthracite.

Before proceeding to enumerate the principal coal seams it will be well to draw attention to the fact that the correlation of the seams of one portion of the coalfield with those of another is often rendered difficult by the frequent splitting up and reunion to which they are subject. Mr. M. Walton Brown it was who first pointed out, by a critical examination of all the evidence available a few years ago, how all but universal is this division of the seams in the Great Northern Coalfield. To this phenomenon, one which has not yet received a perfectly satisfactory explanation, it is largely due that the nomenclature of the coal beds is so confusingly local and that there are so many synonyms.

Most of the seams to be now mentioned, in ascending order, are under 6 feet in thickness and not less than 2 ft. 6 in. Thinner seams, unless of some special interest, are omitted.

Nos. 1 and 2 of the list are in the Lower Coal Measures, as above defined, the rest are all in the so-called Middle and Upper Coal Measures, divisions which, however convenient, are too empirical to be recognized here.

No. 1. The *Marshall Green Seam*.—This coal lies only a little above the Millstone Grit. It may be repeated that within the latter division two or three thin and inconstant coals occur locally, but none of any importance.

No. 2. The *Victoria Seam*.—Known only in the western part of the coalfield.

No. 3. The *Brockwell Seam*, or *Main Coal*.—This is a coal of considerable value and, as before stated, is generally taken as the bottom bed of the workable Coal Measures (i.e. the so-called Middle and Upper Coal Measures). The term *Main* is unfortunately also applied to other seams.

No. 4. The *Three Quarter Seam*.—Not to be confounded with No. 10.

No. 5. The *Five Quarter Seam*.—In some parts of the field this is known as the *Busty seam*, in others as the *Lower Busty*. Not the same as No. 12.



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No. 6. The *Ballarat* or *Upper Busty* Seam.

No. 7. The *Hand* Seam.—A thin coal, not industrially valuable, but very constant and useful as a datum horizon in attempting correlations.

No. 8. The *Stone Coal*, or *Tilley* Seam.

No. 9. The *Hodge*, or *Splint* Seam.—The term ‘splint’ is applied to a hard stony coal breaking up in flat slabs, and to some extent intermediate between common coal and cannel. It is by no means restricted to this horizon, many of the other coal seams containing bands of ‘splint,’ some of which are persistent over considerable areas.

No. 10. The *Yard*, *Three Quarter*, *Harvey*, *Constantine*, *Beaumont*, *Barlow Fell*, or *Towneley Main Coal*, or (in the Consett district) ‘No. 1’ Seam.—This set of names is a good example of the troublesome nomenclature of the Durham seams.

No. 11. The *Ruler* Coal.

No. 12. The *Hutton*, *Main*, or *Five Quarter* Seam.—This is probably the most famous of north country coal seams. It yields in different districts the best household, the best coking, and the best gas coal. In Northumberland it is known as the *Low Main*, and it is in its shaly roof that the finest series of fish and amphibian remains have been collected.

No. 13. The *Brass Thill*.—Not the same as No. 16. ‘Thill’ in the local dialect means the underclay, and ‘brass’ is marcasite or rhombic iron pyrites. A coal with much sulphide of iron in it (pyrite or marcasite) is said to be ‘brassy.’

No. 14. The *Low Main* Seam.—This is not the Northumbrian seam of that name. It is however, in part, the *Hutton* Seam of the Consett district, a complicated bit of correlation due to the splitting up of seams already referred to.

No. 15. The *Maudlin* Seam.—In the Wallsend district, only separated from Durham by the river Tyne, this is known as the *Bensham* Seam, and that name is sometimes also used for it in the neighbourhood of Gateshead, where, indeed, the village of Bensham is situated.

No. 16. The *Main Coal* (in the Pelton district near Chester-le-Street) or *Brass Thill* (in the Consett district).

No. 17. The *Hard Coal* (of Pelton). This seam on the eastern side of the coalfield and in the Consett district is known as the *Five Quarter* Seam.

No. 18. The *Shield Row* Seam, or (in the Wearmouth district) the *Three Quarter Seam*.—This is the celebrated *High Main* Seam of the Northumbrian side of the Tyne, from which the original ‘Wallsend’ coal was obtained close to the easterly termination of the Roman wall.

No. 19. The *Splint* or *Craw Coal*.—Not, of course, the same as the much lower No. 9. The Coal Measures above this seam are denuded away—to what extent must always remain unknown to us.

It will be understood that the intervals between these nineteen



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workable seams are made up of numberless sandstones, shales, fireclays, and thin worthless coals. Owing however to the extreme variation in thickness of these strata—a variation which the continual splitting up and reuniting of the coal seams necessarily implies—no good purpose can be served in a brief synopsis like the present by going into numerical details respecting them. Suffice it to say that the sandstones vary from the coarsest grit to the finest grained sandstone, from massive building stone and material suitable for grindstones to roofing flags, from dark brown to every shade of yellow, grey and occasionally to pure white ; that the shales, locally known as ‘plate’ or ‘metal,’ vary also from highly arenaceous clayey alternations (‘grey beds’) to the finest laminated unctuous bluish beds, and that they frequently contain concretionary nodules and thin continuous bands of clay ironstone sufficiently rich in carbonate of iron to pay handsomely for working in the old days ; and that the underclays and other fireclays are usually excellent in quality as material for refractory bricks or pottery.

### THE PERMIAN SYSTEM

Overlying the denuded Coal Measures and some of the Lower Carboniferous rocks from close to the mouth of the Tyne near South Shields to somewhere between the Hartlepoons and the mouth of the Tees, and therefore unconformable upon everything beneath them, come the Permian Series of the north-eastern type, admirably displayed as regards its thicker members in the coast section. It may be premised that these north-eastern Permians are much more closely allied in aspect and arrangement to the Permian or Dyas series of the continent than to the much nearer representatives of that system in the north-west of England on the opposite side of the Pennine range.

The lowest of the Permian beds on this side of England are better shown in Durham than elsewhere, but they are not visible along the coast in Durham, though excellently exposed in the Cullercoats and Tynemouth cliffs in neighbouring Northumberland. They can however be studied in many fairly good sections inland, along the foot of the Permian escarpment, and still more fully by means of the many borings and sinkings which in the Permian area pierce through them in order to reach the Coal Measures which lie immediately beneath. These Permian basement deposits are known as the *Yellow Sands*.

They are not universally present, even in the county of Durham, but where present they consist of highly false-bedded sandstones ranging in colour from the bright yellow which gives them their name to red on the one hand and (rarely) dark grey on the other. The grains of sand of which the rock is chiefly made up are of moderate size or quite coarse, but usually rounded after the manner of desert sand and very unlike the angular unworn grains of ordinary grits. More often than not these grains of sand are so incoherent as to crumble between the fingers, but sometimes they are cemented more or less firmly by carbonate of lime. Carbonate of lime has also frequently segregated in

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nodular knobs or in anastomosing veins or ribs within the rock, thus giving it a strange and unique appearance. Where this segregation has taken place the sandstone is generally bleached, so that on a weathered surface the knobs and ribs stand out in white upon the yellow background. There are no fossils of any kind in the Yellow Sands deposit, and its place as a true member of the Permian system, which has more than once in time past been disputed, depends more upon the unconformity between it and the upturned denuded edges of the Carboniferous upon which it rests, and upon its complete (though not always well displayed) conformity with the overlying fossil-bearing, and therefore proven, Permian Marl Slate. It may be added that the unconformity referred to is shown not only by the denudation of the coal-bearing rocks before the deposition of the sands, but also by the fact that most of the dislocations affecting the Coal Measures stop short at and do not affect the Yellow Sands. These dislocations are thus pre-Permian faults. A few other faults affect both systems and are therefore post-Permian, though some of these (whose vertical throw or displacement is less in the Permian than in the Carboniferous rocks) are both pre- and post-Permian, an interesting fact proved in several cases in recent years. The denuded floor upon which the sands lie is irregularly undulating, and the sands fill up the hollows and are there thickest—up to 100 feet or thereabouts as a maximum—becoming thin or being absent altogether where the floor rises into diminutive hills. It is in the north and east of the Permian area that the sands are most fully developed. In the south and west they are either thin or wanting.

So loosely coherent a deposit is necessarily a first rate water-bearing stratum, and we find accordingly that the Yellow Sands play an important and twofold part in that capacity—a beneficent part so far as water supply is concerned, though the water from this horizon is generally exceedingly hard, and sometimes, in the neighbourhood of the coast, to a certain extent brackish—a highly inconvenient and occasionally dangerous part from the mining point of view, since shaft sinking through the sands where they are full of water is always attended with great expense and many difficulties, and has more than once given rise to floodings which it has taxed the resources of engineering to the utmost to cope with successfully.

The outcrop of the Yellow Sands is from the nature of the case a narrow and an interrupted one, but where they are thick—as at Houghton-le-Spring, Newbottle, Ferryhill, Claxheugh, etc.—good sections can be examined, though none quite so good as those at Cullercoats and Tynemouth in the neighbouring county.

The present writer has elsewhere given quite recently a very full account of this member of the Durham Permian from which the following theoretical conclusions, agreeing in the main with the views of the late Mr. Richard Howse, may be quoted :—

The history of the beginnings of the Permian system in Northumberland and Durham, such as it can be gathered from the facts already stated and from the details



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with which this paper concludes [a collection of detailed sections], seems fairly obvious.

(1) A mass of sand, probably chiefly derived from the waste of the Carboniferous Sandstones which formed so large an area of the then land-surface to the west, occupied a broad tract of coast from somewhere to the north of Hartley, in Northumberland, to Yorkshire and still farther south, narrower in the north than in the south. This sand was a beach at the coast line and a desert of blowing dunes elsewhere. Rivers, sluggish, and probably inconstant (changing their course as do the channels in a delta), wound their way to the sea across this sandy tract, and added to the irregularity of its surface.<sup>1</sup> The deposition of calcareous and magnesian mud in the thinly bedded layers which betoken tranquil deposition followed, due partly to silting from landwards and from tidal irruptions from seawards most probably in a chain of coastal lagoons. This was accompanied by a downward movement of the coast line and the gradual merging of the lagoons into the sea proper when the Magnesian Limestone, with its curious fauna—a marine fauna checked in its existence by the unfavourable chemical composition of the Permian sea water to which the rock owes its dolomitic character—was deposited. This view is strongly confirmed by the occasional exceptions to the rule that the Marl-slate precedes the Magnesian Limestone proper which already have been referred to, such exceptions (where limestone occurs beneath the so-called Slate) being obviously the result of local accidental breaches of the bars separating the lagoons from the sea.<sup>2</sup>

The *Marl-slate* referred to in this extract is the next Permian division above the Yellow Sands. Whether the latter can in any real sense be said to represent the much more largely developed *Rothliegendes* of the German Dyas may be regarded as doubtful in the absence of palæontological evidence. That the thin Marl-slate is the equivalent of the *Kupferschiefer* is however open to no doubt, although in this country seldom more than a yard in thickness this formation of impure calcareous slabby beds of grey or brownish colour contains a storehouse of fossils which sufficiently attest its exact stratigraphical horizon. Besides shells such as *Nautilus freieslebeni*, *Lingula credneri*, *Discina konincki* and *Myalina hausmanni*, and plants (imperfectly preserved but capable of identification) such as *Neuropteris buttoniana*, *Caulopteris* (?) *selaginoides* and *Polysphonia* (?) *sternbergiana*, this deposit is a true fish bed and yields extraordinarily perfect specimens, usually as entire individuals, of such vertebrates as *Paleoniscus*, *Dorypterus*, *Acentropus*, *Pygopterus*, *Acrolepis*, *Gelacanthus*, *Platysomus*—represented by many species, as well as amphibians and some true reptiles such as *Proterosaurus*. In the county it is at Claxhough, Deaf Hill, Middridge near Shildon, Thickley, and Ferryhill that some of the most remarkable specimens have been found.

The next, and much the most fully developed division of the Permian, following, with perfect conformity over the Marl Slate, is the *Magnesian Limestone*, which in Britain is nowhere so thick or so splendidly exposed for study as in the cliff sections of Durham and

<sup>1</sup> The late Prof. A. H. Green was of opinion that the quicksands (that is, our Yellow Sands) are the deltas of the streams which emptied themselves into the Permian inland sea (*Geol. Mag.* [1872], ix. 191). The entire absence of fossil remains, the form of the grains, and the nature of the cross bedding, seem to point rather to wind as the final distributor of the sand, though Prof. Green's view may quite well be accepted for their first accumulation.

<sup>2</sup> *Trans. Inst. Min. Engineers*, 1903.



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in the numerous quarries inland. Its maximum thickness is about 800 feet, and this is attained beneath the red sandstones of Seaton Carew, as proved by borings made at that place in 1888. Its minimum is in the neighbourhood of Naughton, where it has been proved, also by boring, to be less than 300 feet, but as there is a suspicion of the upper portion of this formation having been denuded off at this spot this minimum thickness is less certain than the maximum quoted. As the Marl Slate is without doubt identical with the *Kupferschiefer* so is the Magnesian without doubt the equivalent of the continental *Zechstein*. Its curiously stunted forms of peculiar marine fossils represented by many individuals but comparatively few species are the same as those of the *Zechstein*. Its general but varying dolomitic character, to which it owes its English name, is the same; and its position in the stratigraphical sequence is also the same. In Durham however its lithological features are extremely peculiar. Long after the limestone was deposited molecular movements took place within the already consolidated rock which, in many places and at many horizons, gave rise to a quite unique development of concretionary structures. From the time of Sedgwick, who first described them from a scientific point of view, to the present day when Dr. George Abbott of Tunbridge Wells has spent the leisure intervals of many years in studying and photographing them, the concretions referred to have attracted and have puzzled geologists. They have been classified according to their endlessly diversified forms, but the cause of so much structural rearrangement in this formation has not yet been clearly established. Professor E. J. Garwood has shown with regard to the simpler spheroidal forms (which are known as the cannon ball limestone) that these are due to the segregation towards centres of the carbonate of lime previously existing in the rock, and not to the introduction of that compound into the magnesian beds from without (this latter was the so-called 'stalactitic theory' of the late Mr. Richard Howse), but it cannot be said that this, which is probably now admitted by all, carries us very far. It is a theory accounting for the multi-form character of the concretions, the 'honeycombed,' 'coralloid,' 'oolitic,' 'botryoidal,' 'egg and cup,' and others infinitely varied besides the spheroids that is required, and this probably experiment only will in time provide.

The Geological Survey in its maps has unfortunately not attempted to divide the Magnesian Limestone. The task, owing to the extraordinary variability of the rock—now earthy, now flaggy, over and over again concretionary in every conceivable form, now massive, now cellular and now brecciated—was no doubt a difficult one. No divisions are shown in the maps. Nevertheless it is possible to arrive at some fairly definite divisions in this curious formation, though we will not go so far as to assert that the following scheme, propounded by the late Mr. Howse, and the best known to us, can be regarded as anything more than tentative. These proposed divisions are (in ascending order) :—

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- (1) *Lower Group*, consisting of
  - (a) a conglomerate at the base and
  - (b) compact limestone.
- (2) *Middle Group*, consisting of
  - (c) shell limestone and
  - (a) cellular limestone.
- (3) *Upper Group*, consisting of
  - (e) botryoidal limestone and
  - (f) upper yellow limestone.

It is better to have a classification such as this, confessedly open to improvement but more useful, so far as it goes, than none at all.

One striking result of the changeable nature of the Magnesian Limestone is, naturally enough, constant difference in the degree of resistance which its component parts offer to denuding action both mechanical and chemical, and, as a consequence of this, extraordinarily diverse weathering features. Where hard and soft, crystalline and earthy, calcareous rock is as it were commingled in a kind of omniform mosaic, it is not surprising to find caverns, ravines, stacks, promontories of all kinds to be the rule, and all such features are eminently characteristic of the coast of Durham from South Shields to the Hartlepoons. One of these features is deserving of special mention. This is the occurrence in some of the cliff sections and in some of the adjoining sea stacks—especially in Marsden Bay—of ancient caverns, V-shaped, and evidently at one time subterranean waterways (like those in the Mountain Limestone of Craven), the roofs or vaults of which have in course of time collapsed, filling the underground ravine with angular fragments of the overlying limestone. These fragments, wholly unrounded, have at a subsequent period been cemented together by secondary dolomitic matter, and now appear as portions of a solid mass of breccia—so solid that several have resisted the waves and the weather better than the unbroken rock from which the original caverns were eroded and now stand out as great sea stacks on the beach. Such a mass is the fine stack known as Lot's Wife near the well-known cave-drilled islet named Marsden Rock. These peculiar breccias, the occasional formation of which even at the present day gives rise to violent but of course quite local earth shakes, are known as 'breccia gashes.'

### THE RED BEDS OF SOUTH DURHAM OR SALT MEASURES

A great series of red coloured sandstones and clayey arenaceous beds, miscalled 'marls,' follows immediately upon the topmost portion of the massive Magnesian Limestone. Quite a thousand feet of these strata are met with in south Durham, and form the floor on which the Pleistocene or Drift deposits have been laid in that region. The latter more often than not conceal the former to so great an extent that no very certain line can be drawn to indicate their lower boundary. Roughly it may be said that the Durham side of the Tees from the mouth of



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that river to Darlington and north to Seaton Carew is made up of these red rocks. Much is known of them however by means of the many borings which, within the last twenty years, have been put down through them in search of the valuable salt beds which they contain. The age of the series has been the subject of some controversy, which need be referred to here but briefly. That the lowest members of the series (which nevertheless differ but slightly from the rest) are of Upper Permian age has been held by several geologists because a few thin beds of Magnesian Limestone occur in them similar in all respects to the main mass of that formation below. The late Sir Andrew Ramsay, Mr. R. Howse and the present writer took this view and were disposed to include some of the red beds above these bands of dolomitic limestone as well in the Permian System, including the lowest, at least, of the beds of rock salt. Others, including Mr. H. Howell and the Geological Survey, regard the whole of the red series as Triassic and—since the Bunter or Lower Trias has been shown by the Survey to thin out and disappear some 20 miles or so to the south of the Tees—as strata of Keuper age (Upper Trias) overlapping the Bunter. The absence of well marked unconformities and of any palæontological evidence must probably always leave the decision of these points doubtful, and it is therefore safer, in our present state of knowledge, to adopt some descriptive non-committal term, such as ‘the Salt Measures,’ to which no reasonable exception can be taken. If the unconformity which it has been hinted may possibly occur at Norton and account for the abnormal thinness of the Magnesian Limestone there, should some day be proved, then the Survey view will properly prevail and all the red beds above the highest of the limestone bands be classed as Keuper.

The salt beds, one of which is from 60 to 100 feet thick, are associated with many layers of gypsum and *anhydrite* (the latter being known to the salt-borers as ‘white stone’), and the mode of their occurrence is in all respects comparable to what obtains in the Triassic salt-bearing series of Cheshire. They lie in the lower portion of the series, and being composed of very soluble material they thin out gradually before reaching the surface. Thus the further to the dip (that is to say, the further away from the original outcrop) one bores for the salt the more likely one is to find it and the thicker it will be. This is why the bores through which the brine is extracted are all clustered close to the Tees and why they are so deep. Attempts to tap the same beds where this horizon approaches the surface have either failed altogether or have only met with deposits so reduced in bulk as to be comparatively worthless. As is the case with most districts underlain by easily soluble rocks, subsidences are not unknown in the Salt Measure area of Durham, but fortunately the great depth of the salt-winnings has prevented the actual workings from causing the dire effects which have followed such undertakings elsewhere. The surface sinkings are here few and due altogether to the natural solution and removal of salt or gypsum at no great distance from the outcrop. The best known are curious depressions at



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Oxenhall near Darlington, known as the 'Hell Kettles.' These sink-holes vary from 75 to 114 feet in diameter.

It is sufficiently clear that during the period of geological time represented by these red beds the area now occupied by south Durham was much in the conditions observable in the Salt Lake regions of Asia, north-eastern Africa, or north-western America—conditions of dwindling inland sheets of water in an arid climate of evaporation, and of salt and gypsum deposition such as the late Sir Andrew Ramsay showed many years ago have so constantly accompanied the accumulation of red-hued sandy strata.

### THE IGNEOUS ROCKS

Most remarkable and, in all probability, with the exception of the Minettes, oldest of the igneous rocks of Durham, is the famous Great Whin Sill, which, though exposed within the county boundaries only in the inlier between Middleton in Teesdale and Caldron Snout, is yet the cause of perhaps the finest scenery in the county. This sill (*sill* means a stratum simply in north country dialect) is a huge sheet of intrusive basaltic rock—strictly speaking, 'diabase'—which is known from a few miles south of Berwick to as far south as Lunedale in Yorkshire, a distance of over 80 miles, and which crops out to the west of this Durham inlier along many miles of the Pennine escarpment and more especially at Highcup Nick. It possibly underlies the whole of the county of Durham, though this will probably never be proved. So vast an intrusive sheet is very exceptional—unique indeed as regards Britain in times later than those during which the much more ancient Dalradian sills of Scotland were injected. In the Middleton inlier it lies very near to the Ordovician and Silurian floor, upon which the Lower Carboniferous rocks were laid down as has already been mentioned (see p. 3); but it is well within the last named series and, although in many places where its position has been ascertained with accuracy (as in mine shafts, etc.) beyond the inlier, it is found to shift its horizon as much as even 1,000 feet in some cases (a sufficient proof of its intrusive character were other convincing evidence lacking), yet it is always within the Carboniferous Limestone Series. This important fact is not, however, enough to enable one to say more as to the age of the Whin Sill than that it is younger than the highest horizon to which it has risen. It is post-Carboniferous Limestone probably (all but certainly so); it is possibly of Permian or even of much later date. The thickness of the sill, considering its enormous area of at least 400 square miles, is extraordinarily uniform, continuing for long distances from 80 to 100 feet, though to the west sometimes much thinner, and sometimes 150 feet or even more. It sometimes splits up into two or even three sheets. In the Middleton tract it is a single sheet and very thick, forming the magnificent columnar scars of Cronkley and the waterfalls of High Force and Caldron Snout. At Stanhope in Wear-dale, in which neighbourhood the main sill is met with in many lead mines, an upper 'split' or branch known as the Little Whin Sill crops

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out among the limestones above the chief sheet. Notwithstanding the changes of horizon, the baking and consequent metamorphism of the shales and limestones *above* as well as beneath the Great Whin Sill—phenomena which render the contemporaneity of the sheet an impossibility, it is strange that the lead miners as a rule still decline to regard it as contemporaneous, and the bed of limestone which happens to be next above it is always, by them, called the Tyne-bottom Limestone (see p. 6), as has been mentioned before. Some very fine pectolite has been found in joint cracks in the Whin Sill near Middleton.

The *Cockfield* or *Bolam* Dyke is, next to the Whin Sill, the most remarkable mass of igneous rock in the county. It is a continuation of the well known Cleveland Dyke, which to the south of the Tees is seen cutting through the Jurassic rocks, and, though it does not everywhere come to the surface, it can be traced north-west beyond the county boundaries as far as Armathwaite where it crosses the Eden with a thickness of 54 feet. At Cockfield its thickness is very variable, 15 to 66 feet. It is the longest known dyke in Britain, being some 110 miles in length (and possibly nearly 200 miles). At Bolam it spreads out laterally in the form of a sill baking coal seams and shales above and below in the same manner as, elsewhere, it bakes and alters them to right and left of its course. The stone of this dyke is often known as 'Old Roger' on Tees-side.

The *Hett* Dyke runs across the coalfield from Quarrington Hill (on the Magnesian Limestone escarpment) to Tudhoe and Hett. It resembles the Whin Sill in composition, and is quite unlike the Cleveland Dyke petrologically. At Brancepeth, about 300 yards from a branch of this dyke, coked or 'cindered' coal occurs over an area of about 50 square yards. This is an unusual distance for contact metamorphism of this kind to be felt, but there is in north Durham a long and broad zone running nearly across the coalfield several square miles in area, where the coal generally has the appearance of having been altered by 'whinstone,' although no dyke or sheet can be pointed to as the cause of this—the coal is however rendered unsaleable by the change it has undergone, whatever this may be due to. The Hett Dyke can be seen near the confluence of the Bedburn Beck and the Wear, and thence runs to Egglestone Moor.

The *Hebburn* Dyke runs from near Cleadon to the Tyne, which it crosses at Hebburn. It is known in Northumberland as the *Walker* Dyke. It may possibly be represented by the amazing number of basaltic blocks on the sea-beach at Whitburn, but it is not actually seen anywhere piercing Permian rocks.

There are a few other dykes in the county very similar in character to the above. All these are probably of Tertiary age, though this must always remain doubtful. All of them as well as the Whin Sill are infinitely younger than the Minette dykes (mica-trap) which have already been referred to (p. 3) as cutting through the older Palæozoic beds of Cronkley in Upper Teesdale.



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## THE PLEISTOCENE OR DRIFT DEPOSITS

From Upper Triassic times no geological period has left traces of its deposits in Durham until the Pliocene or latest Tertiary ages had passed away and the arctic cold of the great Ice Age had covered the greater part of Britain with snow and ice, and had brought it to the condition now prevailing in Greenland. To that Glacial time is due the irregular but often thick cloak of Drift deposits that at the present day conceals beneath it so many of the valleys and other features which denudation had sculptured and eroded on the outcrops of all the older formations so far enumerated and described in these pages.

In this cold Pleistocene epoch all but some of the very highest portions of the county in the west was, as we cannot but believe, entirely smothered under an ice sheet which probably began as small glaciers gliding down the upper dales, and gradually increased in size until these merged into larger glaciers running from north to south across the lower and eastern half of the region. At its maximum the heights bare of ice formed but a small *nunaták* or rocky island in the Yad Moss area. Then, as the severity of the climate was relaxed, the great complex sheet of ice melted away in its lower parts, and waned until the original hill-land glaciers had returned to their original beds and to their original insignificance. Finally, the last of the glaciers dwindled and died out, leaving the country much as we see it now.

Traces of these successive changes are year by year being recognized with the certainty due to constantly increasing knowledge, but it must be admitted that a great deal more work is required in Durham before anything like a final verdict can be given respecting the history of all the difficult deposits grouped under the term 'Glacial.'

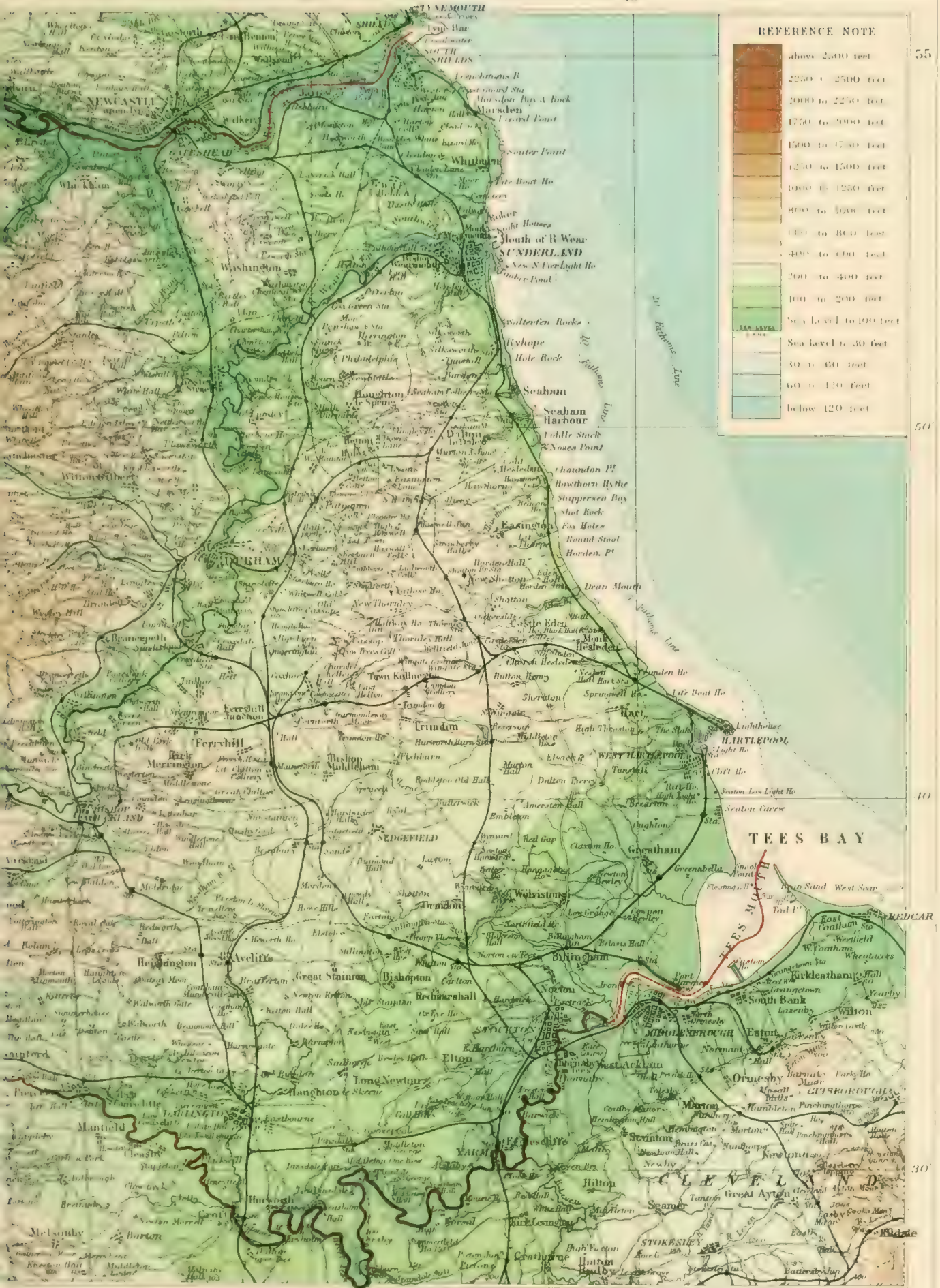
Concerning the lowest of these, the stiff clay studded with boulders—of which many are obviously foreigners that have reached their present abiding place after much travel—the clay known *par excellence* as the Boulder Clay, there is not now much doubt. Few geologists see in it, now, the material dropped into the sea from floating icebergs. It is recognized by almost all as the equivalent of the *Moraine profonde* of Swiss glaciers, i.e. as the ground-down mud interspersed with fallen blocks which underlies moving ice on land. That this Boulder Clay or 'Till' sometimes attains a thickness of 200 feet or even more is evidence enough of the enormous thickness of ice beneath which it was accumulated. The polishing and grooving of the rock surface on which the clay lies is also evidence enough of the movement by which the vast muddy mass was urged over the subjacent floor, and the determination of the place of origin of the travelled stones within the clay yields information as to the directions followed by the ice-currents in their flow over the region. The innumerable pit-sections and boring-records which are available as to the superficial deposits of the entire county, whether in the coalfield or the leadfield, show how widespread is this great Boulder Clay formation ; but they also show how rapidly it varies















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in thickness from place to place, the thickest portions often within a few yards of bare rock or of quite thin Drift. The six volumes of *Borings and Sinkings*, published by the North of England Institute of Mining and Mechanical Engineers, are full of valuable details bearing upon the distribution of this oldest of the Glacial deposits.

All pre-Glacial valleys were necessarily choked up with this clay and most of them are so still, the post-Glacial rivers not having by any means always chosen to follow the ancient channels, and having often preferred to wear down new valleys through virgin rock to digging along their old courses through the stiff intractable material under which they were buried. These concealed pre-Glacial valleys—and there are many of them—are known as ‘washes,’ and frequently present formidable barriers of barren ground to the miner between the denuded edges of coal-seams. The best known of these washes or *washouts* is the long one which, first recognizable high up the Wear valley near Witton-le-Wear, follows more or less parallel to the present river (but rarely coinciding with the actual *thalweg* now existing) to Durham city, half of the market place in which is situated upon it; thence to near Chester-le-Street. Here instead of approximately following the present river and its valley it turns abruptly to the north, actually crosses (as the railway also does) the watershed between the Wear and the Tyne, and, following the Team valley, reaches that of the Tyne 150 feet beneath its bottom level. This pre-Glacial wash is filled with boulder clay and, above that, with later clays, gravels, and sands which, in places, attain a thickness of more than 300 feet. Similar ancient river courses similarly hidden from view by Glacial infillings are numerous, and a number in the north-eastern portion of the county have quite recently been carefully and successfully worked out with much skill and patience by Dr. David Woolacott.

Above the Boulder Clay are vast thicknesses of sand and gravel, as well as limited patches of laminated (locally, ‘leafy’) clays, which are largely the result of the reasorting of the material of the older clay and of silty accumulations in ice-dammed or moraine-dammed lakes at the melting of the ice and after. There is no evidence in Durham of any true Interglacial Period, these gravels and sands, which are usually called the Upper Glacial gravels and sands, being the final set of accumulations due to any phase of the reign of cold. They can be excellently studied along the banks of the Derwent and Wear, where numerous cuttings, both artificial and natural, expose sections of great height and length. Exactly the same kinds of stones are found in these loose deposits as in the Boulder Clay, but the polished and scratched faces which they exhibit in the latter are as a rule effaced by the rolling to which the blocks were subjected during the *débâcles* of the later or melting stage.

It is clear from a study of the Drift of Durham that one great glacier-sheet came from the Tyne valley and from north-west Northumberland and swept due south across lower (or eastern) Durham towards the York-

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shire plain and the foot of the Cleveland hills (which hills Prof. P. F. Kendall has well shown were by no means altogether covered by the ice sheets). It is also clear that another great glacier sheet came from Westmorland along the pass of Stainmore (by Brough-under-Stainmore), and followed roughly the trend of the Tees till it blended with the first-named flow. It was this sheet from the west that brought down all the huge blocks of unmistakable Shap Fell granite which are found all along its course, by Barnard Castle, Darlington and thence to the coast south of Tees from Redcar to Scarborough and Seamer. Thirdly, smaller glacier-sheets pushed their way from the small highland *nunatak* in the Pennine west down the valley of the Wear and down many of the smaller burn- dales between Derwent and Tees. These glaciers all carried material to the greater sheet into which they fell on reaching the eastern lower country, but this material was entirely of local origin, none as in the case of the other and larger glaciers foreigners from great distances. Beyond this Captain Derryhouse has taught us by means of Prof. P. Kendall's new and valuable criteria that as there were lakes held up by the ice in the Glacial period among the Tabular hills in east Yorkshire, so there were similar small lakes on the confines of Durham at the same time in the highest ground free from ice to the west.

### RAISED BEACHES, CAVE-EARTH, OLD PEAT DEPOSITS, ETC.

All newer than the Glacial Drift, but not always easy to place correctly as to relative age among themselves, these accumulations now claim attention.

Dr. Woolacott's researches have largely extended our knowledge of the Durham raised beaches. Some of these occur at a height of 150 feet above present sea-level. It has been already mentioned that the pre-Glacial valley of the Wear ran into the Tyne Valley at 150 feet below the river—i.e. below sea-level nearly, as the Tyne is there tidal. We thus obtain an index to the probable maximum amount of vertical movement to which north-east Durham, at any rate, was subjected in Glacial and post-Glacial times. The land must have sunk at least 300 feet below the level at which it stood when the Team Wash began to be filled in. This is obvious enough, but much careful gathering of observations, now actively going on, by competent men, requires to be done before the details of the old history can with any confidence be completed. At Cleadon, Marsden, Fulwell, Hendon and several other places the raised beaches can be well seen and studied. It is worth noting that besides common beach shells of living species, many chalk flints have in recent years been found in these raised shore gravels.

There are not many cave-deposits in Durham, though the Magnesian Limestone is so riddled with caverns. There are a few however, among which those at Heathery Burn near Stanhope take the first place. The cave here (now destroyed) was in the Carboniferous Limestone, and in 1861 was found to contain remains of the otter, badger, goat, roebuck, hog,



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horse and water-rat. Bones of man with others of dogs, rabbits, goats, sheep, pigs and oxen were, in 1865, found in a Magnesian Limestone cave close to Ryhope Pit. Human remains with edible shells and remains of horse, cow, sheep, dog, pig or wild boar, red deer, roe, badger, fox, yellow-breasted marten, weasel, hedgehog, mole, water-vole, kestrel or merlin, gannet, great auk (now extinct) and other birds were found in some old sea-caves also in Magnesian Limestone high above the present sea-level at Whitburn Lizards in 1878.

Stone implements of neolithic type have occasionally been found and are recorded in the *Transactions* of the local antiquarian societies, but they do not appear to offer any points of special geological interest.

So-called submerged forests, possibly, but not quite conclusively, pointing in a less marked degree than the raised beaches, to earth-movements in comparatively recent times, are observable at low tide at Whitburn, and also at the Hartlepoons, but more evidence is wanted in both cases.

Under the head of recent deposits must be classed the beach-material now in process of accumulation, the loam, sand and gravel of the rivers forming alluvial flats or 'haughs' at the river-bends, and the peat-bogs of the high moorland, some of which represent the sites of lakes (possibly Glacial), but most of which are of later date.

## APPENDIX

### REFERENCES TO A FEW OF THE MORE USEFUL AUTHORITIES.

#### MAPS

- Geological Map of Durham and Northumberland, by N. J. Winch, being part i. vol. iv, *Transactions of the Geological Society of London*, 1816.  
Geological Map of Durham, by William Smith, London, 1824.  
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Sketch-map of the Geology of Northumberland and Durham, by G. A. Lebour, 1886 and 1889.  
Six-inch sheets of the Geological Survey (for the coalfield and part of the lead districts). Also sections and one-inch sheets of the Geological Survey, complete.

#### BOOKS AND PAPERS (GENERAL)

- 'Observations on the Geology of Northumberland and Durham,' by N. J. Winch, *Trans. Geol. Soc.* iv. 1-101, 1816 (read 1814).  
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# PALÆONTOLOGY

Within the limits of the county of Durham vertebrate remains are chiefly confined to two groups of strata widely sundered in geological time, namely to modern, Prehistoric and apparently Pleistocene deposits on the one hand, and to those of Permian and Carboniferous age on the other. Needless to say, the fossils from the Palæozoic formations largely outweigh in point of interest those from the superficial deposits, and among the former the most important are those from the Permian, which include several forms first described on the evidence of Durham specimens, and some of which are at present unknown beyond the limits of that county. Nevertheless, the remains from the superficial formations are by no means lacking in interest, the most noticeable being those of the lynx, the elk, and the great auk. No vertebrate remains have been obtained from the Trias of the county, this formation being, as usual, unfossiliferous.

The great historian of the fossil vertebrates of the county is Mr. Richard Howse, whose Catalogue of the Local Fossils in the Museum of the Natural History Society of Northumberland, Durham, and Newcastle-on-Tyne,<sup>1</sup> has been of the greatest assistance in the compilation of the present account.

Apart from the bones of various species of domesticated mammals, such as the dog, goat, and horse, disinterred during the excavation of Roman camps, the most modern vertebrate fossils discovered in the county appear to be those from estuarine silts or old lake-beds, belonging apparently either to the Historic or the Prehistoric epochs. Among such remains, Mr. Howse records those of the red deer (*Cervus elaphus*) from silt eighteen feet below the surface in Jarrow Dock and Cobble Dene Dock, as well as from the silt of the bed of the Tyne; similar remains being also recorded from West Hartlepool, North Bailey, and from Durham itself. Of the roe (*Capreolus capreolus*) antlers have been found in the Roman camps. More interest attaches to the remains of the elk (*Alces alces*) from beneath the peat at Hartlepool, and at Mainsforth, near Sedgfield,<sup>2</sup> since remains of this animal are very rare in Britain, where they appear to be quite unknown in deposits which can be definitely assigned to the Pleistocene epoch. The wild ox, or aurochs (*Bos taurus primigenius*) has left its remains in the silt of Jarrow Dock, as well as in that of the Tyne, and beneath peat in various localities in the county; and bones of the domesticated Celtic shorthorn—the miscalled *Bos longifrons*—are likewise reported from Jarrow and Hartlepool. Remains of the wild boar (*Sus scrofa ferus*) have been met with in river-silt, as well as in Roman stations, and a skull is recorded from North Bailey. Boars' tusks, together with remains of the dog, the badger, and the Celtic shorthorn, have also been obtained from the cave at Heathery Burn, near Stanhope, in Weardale, which was explored by Canon Greenwell, and yielded implements of the bronze period.

Much greater interest attaches to the remains of the great auk (*Alca*, or *Plautus, impennis*) discovered in cave-deposits at Marsden, in the Cleadon Hills, and described in 1880 by Mr. Howse.<sup>3</sup> Up to the year 1890, at any rate, these were the only remains of this bird discovered in England. They were associated with those of man, the badger (*Meles meles*), the fox (*Vulpes vulpes*), and other species.

Next in order may be considered the remains from fissures in the Mountain Limestone at Teesdale, which may or may not be approximately of the same age as the ordinary cavern-bones from other parts of the country. By far the most interesting of these belong to the lynx (*Felis* [*Lynx*] *lynx*), a species known elsewhere in Britain only from the Yew-Tree Cave, Pleasley Vale, on the borders of Derbyshire and Nottingham. These have been described by the late Mr. William Davies.<sup>4</sup> Other mammals of which the remains have been found at Teesdale include the wild cat (*Felis catus*), the wolf (*Canis lupus*), the fox, the otter (*Lutra lutra*), the roe, the red deer, the wild boar, and the horse. The exploration of the Teesdale fissure by the late Messrs.

<sup>1</sup> *Nat. Hist. Trans. Northumb. and Durham*, x. 227 (1889).

<sup>2</sup> See Woodward and Sherborn *Brit. Foss. Vertebrate*, p. 312; Chirdon Burn, North Tyne, where an antler of this species has been obtained, is here said to be in Durham, instead of Northumberland.

<sup>3</sup> *Nat. Hist. Trans. Northumb. and Durham*, vii. 361

<sup>4</sup> *Geol. Mag.* (2) vii. 346 (1880).

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Backhouse also yielded remains of the capercaillie (*Tetrao urogallus*). Few other vertebrate remains appear to have been recorded from the superficial deposits of the county. The local Natural History Society's Museum possesses, however, a skeleton of the extinct Irish deer (*Cervus giganteus*), or miscalled Irish elk, obtained in the winter of 1855-56 in peat under a thick deposit of brick-earth at South Shields; a pair of antlers of the same species has also been obtained from an ancient forest-deposit at the mouth of the Tees,<sup>1</sup> at Snook Point, which is now in the Durham University Museum; and a second pair was dug up at Nab Hill so long ago as 1840.<sup>2</sup> Probably these may be assigned to the Prehistoric epoch. Remains of the wild boar from South Shields may have come from the same layer.

Finally, a fragment of a tusk, five inches in circumference, found in the excavation of the West Hartlepool Docks, is stated to be the only evidence of the former existence of the mammoth or hairy elephant (*Elephas primigenius*) within the limits of the county.<sup>3</sup> This specimen was preserved in the Athenæum at West Hartlepool. Mr. Howse regards it as being of Prehistoric age, but it should apparently be referred rather to the antecedent Pleistocene epoch.

Passing on to the fossils of the Palæozoic epoch, the first that claim attention are five species of enamel-scaled, or ganoid, fishes from the Upper Magnesian Limestone of the Permian series from Fulwell Hill and Marsden Bay, first brought to notice in 1862 and again in 1864 by Mr. J. W. Kirkby. At first all were referred to the family *Palæoniscidæ*, one to the genus *Acrolepis*, and the others to *Palæoniscus* itself. As regards the first genus, subsequent investigations have confirmed the original determination, but the reference of the others to *Palæoniscus* has proved erroneous, for not only are they distinct from that genus, but they also belong to quite another family group—the *Semionotidæ* in place of the *Palæoniscidæ*; being, in fact, near allies of the well-known Mesozoic genera *Lepidotus* and *Dapedius*. Accordingly, in 1877 they were referred by Dr. R. H. Traquair<sup>4</sup> to a new genus, under the name of *Acentrophorus*, which is thus typified by Durham specimens.

The discovery of these fishes is recorded by Mr. Kirkby in the following words:—

‘The fossils were first noticed by the workmen in August 1861 in a newly-opened quarry belonging to Sir Hedworth Williamson, Bart., at Fulwell, about a mile and a half to the north of Sunderland; and my attention was almost immediately drawn to them by Mr. Harry Abbs, of the latter town . . . . .’

‘The quarry referred to is situated on the northern slope of Fulwell Hill, and is not far distant from another more extensive and much older quarry belonging to the same proprietor. In these quarries, as well as in others on the same hill more to the west, the Magnesian Limestone is largely worked for lime-burning, as it has been in the older quarries for the last sixty years or more. During the whole of that period, up to 1861, no traces of any organic remains had ever been found in the limestone of this hill. But about the time named, or a little before, it became necessary, in order to keep the new quarry at its proper level, to cut through some underlying beds (brought up by an anticlinal) which had never yet been cut through, owing to the unvendible quality of the limestone; and it was in working these lower and inferior strata that the great bulk of the fossil fish were discovered, most of them having been found in one bed, or zone of beds, of limestone; there nevertheless being several instances of their occurrence both above and below that horizon.

‘Soon after their discovery in the new quarry, another on the same anticlinal brought up the equivalent strata in the old quarry, about half a furlong to the south; and it was not long before the same fossils were met with there, besides other species that the first locality had not yielded.

‘The same fish-bed would appear also to extend considerably to the north-east; for I have obtained the tail-half of a small fish from a stratum of limestone in Marsden Bay, occupying the same stratigraphical position as the Fulwell fish-bed.’

Three forms of these Fulwell fishes were respectively named by Mr. Kirkby *Palæoniscus varians*, *P. abbsi*, and *P. altus*; names which in 1877 became changed to *Acentrophorus varians*, *A. abbsi*, and *A. altus*. Another type was provisionally assigned to *Palæoniscus angustus* of Agassiz, an imperfectly known fish of uncertain affinity.<sup>5</sup> Finally the fish originally identified by Mr. Kirkby with *Acrolepis sedgwicki* (an identification subsequently cancelled by its author) was eventually named by Mr. Howse *Acrolepis kirkbyi*. According to Dr. Smith Woodward,<sup>6</sup> it is allied to *A. sedgwicki*, but its affinities and right to specific distinction are not clear.

Following the divisions adopted by local geologists, the next zone of the Permian formation from which vertebrate fossils have been obtained is the so-called Lower Limestone, the Compact Limestone of Sedgwick, which forms in most places a conspicuous plateau, or ‘step,’ in the Permian escarpment. An extremely interesting, although unfortunately very imperfect, specimen from this

<sup>1</sup> *Trans. Tyneside Nat. Field Club*, v. 114.

<sup>2</sup> *Ibid.* 111.

<sup>3</sup> *Ibid.*

<sup>4</sup> *Quart. Journ. Geol. Soc.* xxxvii. 565.

<sup>5</sup> See Woodward, *Cat. Foss. Fish. Brit. Mus.* ii. 447.

<sup>6</sup> *Ibid.* 504.



horizon is a split slab of yellow limestone showing the skeleton of the trunk and part of the skull of a four-limbed air-breathing vertebrate, for which the name *Lepidotosaurus duffi* has been proposed by Messrs. Hancock and Howse.<sup>1</sup> The slab with the skeleton itself is preserved in the local Natural History Society's Museum at Newcastle-on-Tyne, and the counterpart, displaying the impression of the same, in the British Museum. The specimen was obtained in 1867 from a quarry at Middridge, near Bishop's Auckland. By its describers *Lepidotosaurus* was referred to the primæval salamanders, a group technically known as Labyrinthodontia or Stegocephalia, and typically characterised by the complete roofing of the skull, the sculpturing of the cranial bones and of those forming the characteristic chest-shield, the complex internal structure of the teeth, and the presence of an armour of bony scales on the lower surface of the body. Such scales are present in the Middridge skeleton, and serve to indicate that the original determination is probably correct, although, from the imperfect condition of the specimen, the exact serial position of the genus cannot be determined.

The fishes of the Lower Magnesian Limestone of the county appear to be two in number, *Paleoniscus freieslebeni* and *Platysomus gibbosus*, the two genera to which they belong respectively typifying the families *Paleoniscidæ* and *Platysomatidæ*. Both families belong to the enamel-scaled group; the members of the former being characterised, among other features, by their slender herring-like shape, while those of the latter are deeper-bodied, rhomboidal fishes, more like a John Dory in contour. Both species occur typically in the Kupferschiefer, or Upper Permian, of Thuringia. Of *P. freieslebeni* the Durham examples from the Lower Limestone were obtained at Down Hill, near Boldon, Houghton-le-Spring; while those of *P. gibbosus* came from Pallion Quarry, near Sunderland.<sup>2</sup>

Next in order comes the Marlslate—the equivalent of the German Kupferschiefer—which, although a very thin and local deposit in the county, has yielded some very interesting fossils.

The most important, perhaps, of these are two slabs from Middridge, now preserved in the Museum at Newcastle, each of which displays a portion of the skeleton of a reptile of the size of a large lizard. These specimens were described and figured by Messrs. Hancock and Howse,<sup>3</sup> by whom the one was referred to *Protorosaurus speneri*, a primitive reptile from the German Kupferschiefer, while the other was made the type of a second species of the same genus, with the title of *P. huxleyi*. The *Protorosauridæ* form an extremely generalised group of early reptiles whose nearest existing representative is to be found in the New Zealand tuatera (*Sphenodon punctatus*), which typifies the order Rhynchocephalia. At present, they are the earliest known members of the reptilian class. Two species, *P. speneri* and *P. lincki*, are known from the Continent, the first of which is, as above stated, recorded from Durham. *P. huxleyi* is unknown elsewhere than in Durham.

Fish-remains from the Marlslate of the county are much more numerous. Among these, mention may first be made of the widely spread primitive shark known as *Janassa bituminosa*, typically from the German Kupferschiefer, but of which teeth have been discovered at Middridge. These teeth, as in other representatives of the *Petalodontidæ*, formed a pavement when arranged in the mouth; the number of rows of principal teeth in this particular genus being three. From the evidence of Durham and Northumberland specimens, Messrs. Hancock and Howse<sup>4</sup> formulated a scheme of the mode of arrangement of the teeth, from which they were led to believe that *Janassa* was a ray. Their interpretation was, however, shown by the late Professor K. von Zittel to be incorrect. Another shark, *Wodnika althausi* (also known as *W. striatula*), belonging to the same family (*Cestraciontæ*) as the existing Port Jackson shark, is recorded by Mr. Howse from the Marlslate of East Thickley Quarry. The species, which is the only member of its genus, is typically from the Kupferschiefer of Thuringia; and the genus is distinguished from the Port Jackson shark (*Cestracion*) by all the teeth, which are large size, being of a crushing type, and by the small number of those in the front of the jaws. Although the species is included in Messrs. Woodward and Sherborn's *British Fossil Vertebrates*, it is not given as British in the *Catalogue of Fossil Fishes in the British Museum*.<sup>5</sup> Of the enamel-scaled, or ganoid, fishes from the Durham Marlslate, the first is *Cælacanthus granulatus*, the typical representative of a genus and species founded by Agassiz on a specimen (now in the British Museum) from Ferryhill, but likewise known from Fulwell Hill and Middridge, and also occurring in the Thuringian Kupferschiefer. The genus belongs to a separate family (*Cælacanthidæ*) of fringe-finned ganoids, now represented by the bichers and the reed-fish of the African rivers. The specimen from Ferryhill described in 1850 by Sir Philip Egerton as a distinct species under the name of *C. caudalis* is now ascertained to pertain to an immature example of *C. granulatus*.

<sup>1</sup> *Nat. Hist. Trans. Northumb. and Durham*, iv. p. 219, pt. viii, and *Quart. Journ. Geol. Soc.* xxvi. 556, pt. 38 (1870). <sup>2</sup> *Vide* Howse, *Nat. Hist. Trans. Northumb. and Durham*, x. 247.

<sup>3</sup> *Quart. Journ. Geol. Soc.* xxvi. 565, pls. 39 and 40 (1870).

<sup>4</sup> The name (as was usual at that time) is spelt *Proterosaurus*.

<sup>5</sup> *Ann. Mag. Nat. Hist.* (4) v. 47 (1870).

<sup>6</sup> i. 248.

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Of ganoids with a more normal, or, rather, more specialised, type of fin, our first representation is *Pygopterus humboldti*, a member of the family *Palæoniscidæ* first described on the evidence of specimens from the continental Kupferschiefer, but subsequently identified from the Marlslate of Middridge and Ferryhill. A specimen from the latter locality was regarded by Sir P. Egerton as representing a distinct species, *P. latus*; but its peculiarities in shape appear to be due to the effects of crush.<sup>1</sup> This fish has also been called *P. mandibularis*. To the same family belongs *Palæoniscus freieslebeni*, already mentioned under the heading of the Lower Magnesian Limestone, which also occurs in the Marlslate of Ferryhill, Middridge, and East Thickley. A second species of the same genus, *P. longissimus*, was named on the evidence of a specimen from the Clarence Railway cutting, near Mainsforth, in the present county, and also occurs at Ferryhill and Middridge. The type specimen is in the Museum at Newcastle-on-Tyne, but the counterpart is in the collection of the British Museum. A third species, *P. macrophthalmus*, also typically from Durham, occurs at Ferryhill and Middridge; the type specimen (a nearly complete fish) being in the Museum of the Geological Society of London. The so-called *P. elegans* appears to be a synonym of *P. freieslebeni*. To the same family belongs the genus *Acrolepis*, already referred to when treating of the fishes of the Lower Magnesian Limestone. It is typified by *A. sedgwicki*, first described from Middridge, and also occurring at Ferryhill; the continental *A. asper* being apparently referable to the same species. A second species, *A. exsculpta*, typically from the German Kupferschiefer, is also recorded from the Marlslate of Middridge and Fulwell Waterworks.

The family *Platysomatidæ*, the members of which, as already said, are distinguished from the *Palæoniscidæ* by their shorter and deeper bodies, are represented in the Marlslate of the county by at least two, and possibly by three, species. The first of these is *Globulodus macrurus*, a genus and species typically from the German Kupferschiefer differing from the better known *Mesolepis* of the Coal Measures by the dentition. This fish occurs both at Middridge and Ferryhill. Of the typical genus *Platysomus*, the aforesaid *P. gibbosus* (also known as *P. striatus*) occurs at the two localities last named.

Perhaps the most remarkable of all the Marlstone fishes is the one described from the German Kupferschiefer as *Dorypterus hoffmanni*, of which the serial position is still problematical. According to Messrs. Hancock and Howse, by whom they were described, four examples of this singular fish have been discovered at Middridge, two in 1865 and two in 1869; all four being in the Newcastle Museum. The genus takes its name from the presence of a sword-like dorsal fin, recalling in form (although not in structure) the back-fin of a killer-whale. Dr. Smith Woodward<sup>2</sup> observes that:— 'This fish still requires satisfactory elucidation, but it is evidently related to the *Platysomatidæ*, as indicated by the great development of the azygous [unpaired] fin-supports, which are sometimes, at least in part, mistaken for dermal structures. So far as the absence of flank-scales is concerned, *Dorypterus* bears the same relation to the typical *Platysomatidæ* as *Phanerosteon* with respect to the typical *Palæoniscidæ*.'

Lastly, in the family *Semionotidæ* we have a species of the genus *Acentrophorus*, already referred to under the heading of the Lower Magnesian Limestone, in the Marlstone of the county. This species, *A. glaphyrus*, was named by Agassiz on the evidence of a Durham specimen preserved in the York Museum. It differs from the type species by the conspicuous serration of the scales. There are specimens of this fish from Middridge and Ferryhill in the collection of the British Museum.

Although remains of fishes are far from uncommon in the Northumberland Coal Measures, few appear to be recorded from the Carboniferous rocks of Durham, none being mentioned by Mr. Howse in his catalogue of the collection in the Newcastle Museum. The present writer has, however, been informed by a local authority that such remains are quite common in the Durham Coal Measures, more especially in the shaley layer capping the Hutton seam. They have never yet been collected systematically, although they are probably quite as numerous as in the hard main shale at Newsham, Northumberland (which is the same bed as the Hutton seam), where they were assiduously collected by the late Mr. Atthey.

One species of fossil fish, the primitive pavement-toothed shark *Petalodus acuminatus*, is recorded from the Upper Carboniferous Limestone of the county by Dr. A. Smith Woodward in the *Catalogue of Fossil Fishes in the British Museum*.<sup>3</sup> Since, moreover, in the same work<sup>4</sup> the widely spread fringe-finned ganoid *Megalichthys bilberti* is stated to be known from all the English Coal-fields, its remains probably occur within the limits of the county under consideration.

<sup>1</sup> See *Cat. Foss. Fish. Brit. Mus.* ii. 474.

<sup>2</sup> *Cat. Foss. Fish. Brit. Mus.* ii. 550.

<sup>3</sup> i. 43.

<sup>4</sup> ii. 380.











## LIST OF BOTANICAL DISTRICTS

Based on the River Basins

- I Derwent  
 II Wear  
 III Tees







# BOTANY

## GENERAL PHYSICAL CHARACTER OF THE COUNTY WITH RELATION TO THE FLORA

THE physical features of Durham, which embrace a wide range of altitude, exercise an important influence upon climatic conditions, and together with the different geological strata tend to produce an extremely rich and varied flora. A glance at the Orographical Map will show the general configuration and boundaries of the county.

The zones of altitude extend through three of the six zones into which H. C. Watson, in his work on *Botanical Geography*, divides the surface of the county; these corresponding to his mid-agrarian, super-agrarian, and infer-arctic zones. Following Baker's scheme these may be described as the Lower, Middle, and Upper Zones, the Lower including the heights up to 900 feet, the Middle those between 900 feet and 1,800 feet, and the Upper the heights beyond that level.

At the western extremity of the county, where its width contracts to only 10 miles, the two great river systems take their rise, this neck of land embracing the whole of the Wear watershed, and half of the tract drained by the Tees. The latter has its actual source in Cumberland, rising east of Cross Fell (2,900 feet) some few miles west of the district, and enters the county at a high moorland region 1,600 feet above sea-level. This is a wild, desolate expanse, which northwards, beyond the Crookburn, extends into a series of lofty ridges of similar character, presenting the most mountainous aspect of the whole county. These high grassy and heathery peaks sweep boldly round the head of the dales, the most elevated points from south to north including Viewing Hill (2,097 feet), Highfield (2,322 feet), Burnhope Seat (2,546 feet), Deadstones (2,326 feet), Knoutberry Hill (2,195 feet), Nag's Head (2,207 feet), and Kilhope Law (2,206 feet), which last commands the extreme north-west of the county. From this eminence a fine view is obtained over the Cheviots and Allenheads in the Northumberland border. On the southern flank of Burnhope Seat is found the weird-looking tract of Yad Moss, a wild expanse of peat, covered with a very scanty vegetation and broken up by deep rifts cut in the black peat to its foundation of shaley sandstone, indicating in a remarkable manner the great force of the western gales. A succession of peaks of gradually declining altitude form undulating ranges of hills proceeding eastwards, one of which, north of the Wear, forms the watershed between that river and the country drained by the

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Allen and the Derwent. South of the Wear rises another high, heather-covered ridge, the principal peaks of which are Chapel Fell Top (2,294 feet) and Fendrith Hill (2,284 feet) ; this separates the valleys of the Tees and the Wear, and the whole then gradually slopes away through undulating moorland and wide-stretching commons down to the fertile plains below. Altogether, there are fully twenty peaks which ascend into the Upper Zone. The 900 feet contour line forming the lower limit of the Middle Zone enters the county from the north, near Blanchland, and follows the trend of the Derwent as far east as Cold Rowley, where it bends sharply to the south, passing over the Wear valley near Wolsingham, and extending thence as far as Egglestone. From this point the contour line extends westwards up the Tees valley to Winch Bridge, and up the Wear valley it reaches nearly to St. John's Chapel. This forms, roughly, the boundary of the very high moorland region.

On the upper slopes of these hills or 'fells' the ground is often very wet and boggy, and deep holes, the sides of which are covered with ferns, mosses, and liverworts, may prove a dangerous pitfall for the unwary. Spongy patches of bog-moss (*Sphagnum*) and *Polytrichum*, the ling (*Calluna vulgaris*), heather (*Erica Tetralix*), the wind grass (*Aira flexuosa*) with its graceful panicles supported on tall red stems, the fescue (*Festuca ovina*), *Juncus squarrosus*, *Carex stellulata*, the waving, feathery tufts of the mat-grass (*Nardus stricta*), sweet vernal grass (*Anthoxanthum odoratum*), bent-grass (*Agrostis vulgaris*), and the hard fern (*Lomaria Spicant*) cover the summit with a coarse vegetation, among which the marsh violet (*Viola palustris*), the dainty little *Potentilla tormentilla*, and *Galium saxatile* are freely scattered. The white, fluffy heads of the cotton-grass (*Eriophorum vaginatum*) also appear conspicuously, and the knout-berry (*Rubus chamaemorus*), with its large, beautiful white flower and raspberry-like fruit, as well as the bilberry (*Vaccinium Myrtillis*), the whortleberry (*V. Vitis-idaea*), and the crowberry (*Empetrum nigrum*) are generally abundantly distributed. Such is a description of the plants found in the Upper Zone of Burnhope Seat, and it may be taken as typical of the other higher hills of similar character, as well as many of those at a lower altitude possessing the same features. The upper part of the Middle Zone does not materially differ from the lower part of the Upper Zone, and in this belt very commonly occur such plants as the sundew (*Drosera rotundifolia*), the butterwort (*Pinguicula vulgaris*), the marsh willow-herb (*Epilobium palustre*), the starry saxifrage (*Saxifraga stellaris*), the bog stitchwort (*Stellaria uliginosa*), the lesser spearwort (*Ranunculus flammula*), and the marsh speedwell (*Veronica scutellata*) ; these extend also into the lower Middle Zone and even to the coast-line.

The wide extent of these peaty, heather-covered moors, with their prevailing vegetation, is due to the prevalence of sandstones and shales, which thickly overlie the main limestone formation. The mountain limestone constitutes a large part of Upper Teesdale and Weardale, but it presents few of the characteristics so strikingly represented in the West Riding of Yorkshire. The calcareous strata crop out chiefly in the dales,



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and in place of precipitous scars the characteristic 'hopes' form a more special feature. These branch out from the main dales and are narrower valleys or ravines cut in the mountain sides by the burns or tributaries of the main stream. In Kilhope, Welhope, Ireshope, and Burnhope the main limestone crops out along the edge of the fells at from about 1,650 feet to 1,800 feet, and reaches an elevation of 1,800 feet in Bleak Law. On the steep banks of Langdon Dale lines of limestone cliff stand out conspicuously, reaching a height of 2,100 feet in Highfield above the Grasshill lead-mines, from which it gradually declines towards Newbiggin Moor. Here the limestone is exposed at 1,500 feet; from this point it rapidly descends, and at Egglestone is lost at a height of some 500 feet, disappearing also about the same elevation below Frosterley, on the Wear.

Many plants generally associated with the lowlands attain in the Weardale 'hopes' and in Harwood Dale an unusually high altitude, and many reach their maximum limit in these limestone dales. *Equisetum palustre* and *Nephrodium dilatatum* ascend to 2,100 feet on Highfield, and the tway-blade (*Listera ovata*) to 1,950 feet in Harwood Dale. The whitlow grass (*Erophila vulgaris*), the prickly shield-fern (*Aspidium aculeatum*), and the brittle bladder-fern (*Cystopteris fragilis*) are found at 1,800 feet on Kilhope and Bleak Law. On the southern slope of Kilhope Law the moonwort (*Botrychium Lunaria*), *Gentiana Amarella*, the lady's mantle (*Alchemilla vulgaris*), and the water cress (*Nasturtium officinale*) are interesting plants found at an elevation of 1,600 feet. Among other plants peculiar to the limestone the following may be specially mentioned at high elevations:—in Harwood Dale the moor-grass (*Sesleria cærulia*), the hairy rock-cress (*Arabis hirsuta*), *Scabiosa columbaria*, and the oat-grass (*Avena pratensis*); the vernal sandwort (*Arenaria verna*), frequent throughout the lead country on old lead-mine rubbish; the stone blackberry (*Rubus saxatile*) and the rock rose (*Helianthemum vulgare*) rejoicing in the dry, exposed, rocky surfaces in Burnhope; on Falcon Clints the carline thistle (*Carlina vulgaris*), the mountain melic-grass (*Melica nutans*), the spring gentian (*Gentiana verna*), and the smaller-flowered species (*G. Amarella*) blooming later in the autumn, as well as the kidney vetch (*Anthyllis vulneraria*) ascending to the plateau on Widdy Bank Fell. The peculiarly rare yellow saxifrage (*Saxifraga hirculus*) grows in two places in Ireshope at an altitude between 1,200 feet and 1,500 feet. This is a greatly prized Durham species, being known in only two other localities in England—north-west Yorkshire and Westmorland, and it is a plant by no means easy to find. There are one or two stations in Scotland. The alpine penny-cress (*Thlaspi alpestre*) shows a curious preference for the lead-mines throughout the district. The cranberry (*Vaccinium Oxycoccus*) is abundant on all the higher Teesdale and Weardale moors, while the rare bog whortleberry (*V. uliginosum*) is found only sparingly among the turfy bogs. The alpine variety of the scurvy grass (*Cochlearia officinalis*) is also very frequent, and is carried down into the low country along the streams. Several species of club-moss (*Lycopodium*) are widely



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distributed amongst the moors. *L. clavatum*, *alpinum*, and *Selago* are the most readily detected. *Selaginella Selaginoides* is frequent along the stream-sides amongst the hills, but its habit renders it very inconspicuous, and it may be easily overlooked without careful search.

In all the higher moorlands of Derwent Vale, as well as Teesdale and Weardale, abundant evidence of extinct forest vegetation may be met with. The remains of roots, both of oak and birch, are found, *in situ*, deeply buried in the peat, while fallen trunks and branches of birch project freely wherever the peat is exposed. Thick deposits of hazel nuts occur in the beds of peat moss by the sides of the Burnhope Burn, above Wearhead. The oak must certainly be considered truly indigenous in Durham, for enormous trunks and branches are also dug out of all the peat mosses not situated at a great elevation above the river levels. It is well known that at no very remote period vast forests occupied the northern shores of the Wear, which were inhabited by large herds of deer. This has been thoroughly established by the discovery of many animal and vegetable remains during dredging operations undertaken to remove the accumulation of many centuries' tidal deposits, drift, and *débris* obstructing the river about 2 miles west of Sunderland.<sup>1</sup> From a depth of 10 feet below the bed of the river there were dredged up the trunks and branches of trees, chiefly magnificent specimens of oaks, and large quantities of the antlers of red deer, remarkable for their size and good preservation.<sup>2</sup> The forest formerly existing in Upper Teesdale was also the haunt of red deer, and it is chronicled that on Rood Day, 1673, above 400 deer were destroyed by a severe storm of snow. Winch observes that 'On the elevated moors between Blanchland, at the head of the Derwent, and Wolsingham, on the river Wear, . . . the roots and trunks of very large pines (*Pinus sylvestris*) are seen protruding from the black peat moss, being exposed to view by the water of these bogs having drained off and left the peat bare; but this tree is no longer indigenous with us. It may be worthy of remark that the Scotch fir does not at this day attain the size of these ancient pines, though planted in similar situations, even though the young trees be protected and the plantations situated at a lower level.'

In the upper parts of the 'dales' many of the cultivated plants

<sup>1</sup> An account of the Ancient Remains found in the bed of the Wear at Claxheugh, contributed to the *Transactions of the Tyneside Naturalists' Field Club*, 1858-60, by F. H. Johnson, M.D.

<sup>2</sup> An old Saxon poem, referred to the Danish-Saxon period preceding the Conquest, gives a description of the Wear which helps us to realize the existence of an ancient sylvan vegetation very different from any known at the present day (Hickes' *Anglo-Saxon Grammar*).

'A river of rapid waves;  
And there live in it  
Fishes of various kinds,  
Mingling with the floods;  
And there grow  
Great forests;  
There live in the recesses  
Wild animals of many sorts;  
In the deep vallies  
Deer innumerable.'

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attain a high limit of successful cultivation. It is, however, very inconsiderable compared to the elevation at which agriculture flourished in former times. In many places over the wild moors the land can be seen to have been furrowed by the plough at a height at which it is quite impossible for corn crops to be obtained at the present day. In 1825 Winch mentions that oats then only grew at some 2,000 feet<sup>1</sup> above sea-level, wheat at about half that altitude, and barley and rye at stations between these two. In Baker's *Flora* (1868), the greatest height given for the oat in Weardale is 1,340 feet, for barley 1,000 feet, and for wheat 750 feet; but at the present time much of this arable land is laid down for permanent pasture, and the height at which the oat is cultivated is apparently now reduced to about 800 feet. Above the zone of cereal cultivation and reaching to the rough vegetation of the moors are rich old pastures mown annually for hay, in which the useful agricultural grasses and meadow herbage flourish most luxuriantly. The handsome purple heads of the melancholy thistle (*Carduus heterophyllus*) are often a striking feature among them, and everywhere in these upland pastures there is an abundance of the mountain pansy (*Viola lutea*) in all varieties, from the beautiful dark purple to pale mauve, almost white, and yellow. In the damper spots with coarser herbage these meadows in the spring are a blaze of yellow with brilliant masses of the marsh marigold (*Caltha palustris*) and globe flowers (*Trollius europæus*). The bird's-eye primrose (*Primula farinosa*), an exquisitely scented and delicately tinted flower, is also commonly distributed among the more marshy places. The boundary between the different types of vegetation is determined not so much by altitudes as by such conditions as soil, drainage, aspect, etc. For example, on the flanks of Kilhope Law, rich natural pastures are found at an elevation of 1,700 feet, but in Burnhope this sinks down to about 1,400 feet. The truth of this reflection is also exemplified by the unusually high region in which regularly inhabited houses are found in Durham. One farmhouse in Highfield above the lead-mines stands at 2,000 feet above sea-level, and Clough House on Kilhope Law is occupied at 1,700 feet. Even approaching this high altitude, around the farmhouses small gardens are common in which potatoes, rhubarb, turnips and cabbages, onions, gooseberries, strawberries, and even a few roses can be grown with success. In favourable situations on the hill-sides at an altitude of 1,600 feet plantations of beech (*Fagus sylvatica*), spruce (*Abies excelsa*), larch (*Larix europæa*), and Scotch fir (*Pinus sylvestris*), withstand the weather and form valuable woods; the sycamore (*Acer pseudoplatanus*) also attains a fair size. The hazel (*Corylus Avellana*) and alder (*Alnus glutinosa*) scarcely reach this altitude, and oaks (*Quercus Robur*) of stunted growth are only met with at a slightly lower level. The common elm (*Ulmus campestris*), which flourishes as a large tree on the western side of the Pennine range, is not indigenous north of the Tees, and even when planted in sheltered situations does not attain any considerable size. The wych elm (*Ulmus montana*), however,

<sup>1</sup> It is probable that Winch has here somewhat over-estimated the altitude.



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is truly indigenous, and is everywhere abundant in the hedgerows, though now scarcely ascending above 1,200 feet.

The scenery of Upper Teesdale with its sub-alpine heights is peculiarly grand and striking. The great basaltic Whin Sill here attains a thickness of over 200 feet, and gives a wild and picturesque character to the landscape. At Cauldron Snout the river thunders through a deep narrow gorge in a fine rush of turbulent waters, forming one of the grandest waterfalls in Britain. None other approaches its fall of 100 feet upon a stream of such volume. Huge fallen boulders and sharp-edged basaltic cliffs form a rugged background ; all around is desolation : not a tree or any sign of habitation interrupts the waste of dreary moorland. A variety of the alpine willow-herb (*Epilobium anagallidifolium*) is an interesting plant found close to Cauldron Snout, and a rare species of sedge (*Carex rigida*) should be specially noted here. The purple marsh-cinquefoil (*Comarum palustre*) also occurs on the swamps near at hand. From a short distance above Cauldron Snout commence low banks of a curious white granular limestone which extend eastwards along the back of Widdy Bank Fell. The main basaltic rock formation, with this coarse 'sugar limestone' which here overlies it, provides a botanical district quite exceptionally rich in rare and peculiarly Montane species. It is not possible to find in Great Britain any piece of ground of similar area which produces so many extremely rare plants as Widdy Bank Fell. The side of this hill towards the river is faced by precipitous basaltic cliffs known as the Falcon Clints, which extend in jagged, irregular outline for some two miles down the stream. From the other side of the hill over the beds of 'sugar limestone' flow several streams in three directions—east, west, and south-east. The following rare plants are mentioned by Baker as occurring upon the crags and the banks of these streams, within an area of four square miles :

<i>Viola arenaria.</i>	<i>Hieracium iricum.</i>	<i>Asplenium viride.</i>
<i>Arenaria uliginosa.</i>	— <i>pallidum.</i>	<i>Woodsia ilvensis.</i>
<i>Thalictrum alpinum.</i>	— <i>anglicum.</i>	<i>Polypodium calcareum.</i>
<i>Draba incana.</i>	<i>Gentiana verna.</i>	<i>Equisetum variegatum.</i>
<i>Potentilla alpestris.</i>	<i>Arbutus Uva-ursi.</i>	<i>Poa Parnellii.</i>
<i>Sedum purpureum.</i>	<i>Bartsia alpina.</i>	<i>Galium sylvestre.</i>
— <i>villosum.</i>	<i>Kobresia caricina.</i>	<i>Tofieldia palustris.</i>
<i>Saxifraga aizoides.</i>	<i>Juncus triglumis.</i>	<i>Scirpus pauciflorus.</i>
— <i>stellaris.</i>	<i>Carex capillaris.</i>	<i>Armeria maritima.</i>
— <i>hypnoides.</i>	<i>Sesleria cærulea.</i>	<i>Primula farinosa.</i>
<i>Galium boreale.</i>	<i>Cryptogramme crispa.</i>	

Cronkley Fell presents a bold front on the Yorkshire side of the river ; it rises perpendicularly, repeating precisely the same physical features as its opposite neighbour, and many of the rarities just enumerated are common to both grounds. The Upper Teesdale district generally should be considered to include both the Yorkshire and Durham borders, and many of the very rare plants are quite peculiar to this special region. Near Barnard Castle and Rokeby and further eastwards along the banks of the Tees the delightful woods on both sides of the river are also



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charmingly productive of a similar rich sylvan flora. It should be mentioned that *Arenaria uliginosa* is a plant only found on the Durham border on Widdy Bank, and it has no other locality in Great Britain. *Potentilla fruticosa*, with its characteristic bushy growth and pretty yellow flowers, which grows abundantly lower down the stream by the Whetstone Sill, is found also plentifully on Cronkley Scar, but is known in no other locality in England except sparingly in Cumberland and Westmorland. This Whetstone Sill, a flat piece of ground where Langdon Beck and Harwood Beck unite with the main stream a mile above High Force, is a famous botanical ground. Here are first seen the rare species of hawkweed, *Hieracium crocatum*, *gothicum*, and *corymbosum*, and the tea-leaved willow (*Salix phylicifolia*) also grows here. The very rare spring gentian, the lovely deep blue *Gentiana verna* of the Swiss mountains, is to be gathered in plenty about Widdy Bank Fell and in many places on the high limestone pastures. At High Force, five miles below Cauldron Snout the river again contracts into a very narrow channel between high basaltic cliffs, and the water leaps over a precipice with a sheer fall of 70 feet. Birch, beech, elm, and alders spring from the fissures of the dark, smooth-faced cliffs of basalt, and magnificent groups of remarkably fine spruce trees above help to complete a striking picture, with the purple heather-clad fell commanding the background. Weird forms of junipers make a conspicuous feature here and for some distance up the stream along the strath, among the fallen boulders. Here again *Potentilla fruticosa* grows abundantly, and extends as far down as Middleton, where the basalt comes to an end. Many of the rarer plants of the Widdy Bank plateau get carried down by the stream to a much lower level, and the luxuriant woods which extend for a considerable distance below High Force thus continue to furnish many rare floral beauties dispersed along the rocky banks of the stream. The lily of the valley (*Convallaria majalis*) and the herb-paris (*Paris quadrifolia*) hide in the cool recesses of the woods near High Force, and the autumn-flowering crocus (*Colchicum autumnale*) is a specially rare plant appearing opposite Egglestone. On approaching High Force the upper part of Teesdale loses its distinctively wild moorland character, and plantations of spruce and firs with other well-grown trees appear, giving a much more cultivated aspect. Extensive fir-plantations reach to the top of the moor at Egglestone; the rare marsh orchid (*Malaxis paludosa*) has a well-established home on the banks of the Eggesburn, and the cordate tway-blade (*Listera cordata*) may also be found near the same spot. Below Egglestone the Tees valley, and below Wolsingham the Wear valley, gradually widen as these rivers emerge from the highlands of the western parts of the county and flow through the less elevated central regions. The high fells still extending between these points and further north now rapidly decline in level. A sinuous line from Barnard Castle through Witton-le-Wear to Wolsingham and then northwards indicates roughly the boundary east of which the coal measures are met with, overlaid for the most part with boulder clay. The principal collieries

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fall within the drainage tract of the Wear, and in the Auckland valley several very rich mines are worked. Thick seams of coal and the fossilized remains of plants found in the carboniferous formation furnish evidence of a luxuriant vegetation during this period. The fronds of many species of ferns, fragments of the stems of *Calamites*, *Lepidodendron*, *Picea*, *Pinites*, *Sigilaria*, and *Stigmaria* are among the commonest forms met with in abundance in a good state of preservation.

As the moors diminish in extent they are replaced by pasture and arable land. The general vegetation presents few features calling for special remark. The rivers flow for the most part through deeply excavated banks, and the many beautiful ravines and denes in which shade plants love to shelter are characteristic of the whole county. The country is richly wooded, and the numerous well-timbered parks, such as Raby, Winyard, Ravensworth, and Gibside, boast some specially fine trees. Large woods have been planted in some localities, chiefly of Scotch pine and larch. A geological formation which has a marked influence upon the character of the vegetation is the magnesian limestone. Speaking generally, this occupies a triangular area eastwards of a line from Shields to Piercebridge, and extending thence as far as the coast, where it ends abruptly in a broken outline of outstanding cliffs. The highest escarpment lies to the west. Between Sedgefield and Darlington the general altitude attains some 300 feet, forming the watershed of the Skerne, a river rising further northwards in the magnesian limestone hills, near Trimdon, here reaching a height of 606 feet, their greatest elevation. The Skerne first flows eastwards, but suddenly turns south-westwards at Hurworth, some six miles from the sea, to follow a winding, sluggish course through Darlington, finally joining the Tees at Croft. A large flat tract of country, consisting for the most part of beds of red sandstone overlaid with boulder clay, occupies this south-eastern part of Durham from Sedgefield to Hartlepool, and southward to the Tees. The ponds, ditches, and slowly running streams of this district furnish very favourable stations for aquatic plants. Morden, Bradbury, and Preston Carrs, through which the Skerne flows, occupy the site of a former lake, now since the drainage forming a large extent of peaty soil somewhat resembling the fens of the eastern counties. Here, especially along the banks of the Skerne, and around Billingham and Norton, the ditches abound in water plants, among which may be specially mentioned the common meadow rue (*Thalictrum flavum*), the great spearwort (*Ranunculus lingua*), the water crowfoot (*R. fluitans*), the shining pond-weed (*Potamogeton lucens*), the mare's tail (*Hippuris vulgaris*), the water milfoil (*Myriophyllum verticillatum*), the glaucous stitchwort (*Stellaria glauca*), and the bur-marigold (*Bidens tripartita*). The following are quite special to these localities, and are not known in the neighbouring county of Northumberland: the frog-bit (*Hydrocharis Morsus-ranæ*), the mudwort (*Limosella aquatica*), the small creeping persicaria (*Polygonum minus*), the arrow-head (*Sagittaria sagittifolia*), the great water dock (*Rumex hydrolapathum*), the flowering



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rush (*Butomus umbellatus*), and the water violet (*Hottonia palustris*). The last occurs also near Durham and Sunderland, and finds here its most northern limit. The Hell Kettles, a remarkable series of large deep ponds surrounded by boggy ground and overgrown with rushes and sedges, is a botanical region worthy of note. Here grows the sedge (*Cladium Mariscus*), so valuable in the eastern counties for thatching; and, among other rarities, *Juncus obtusifolia*, *Carex stricta*, the bladderwort (*Utricularia vulgaris*), the mealy guelder-rose (*Viburnum lantana*), and the rough stonewort (*Chara hispida*), all denote the peculiar features of a fen vegetation. *Iris fætidissima* is a very rare plant found in the damp woods. The flora of the magnesian limestone district is in great contrast to that of the boulder clay and the coal-measures. The warmer, better-drained soil supports again the lime-loving plants, and the special limestone species of the west are thus once more freely met with in the east, with the addition of some nine species which are confined to the magnesian formation. These are the perennial flax (*Linum perenne*), the bearded St. John's wort (*Hypericum montanum*), the sainfoin (*Onobrychis sativa*), the woolly-headed thistle (*Carduus eriophorus*), the privet (*Ligustrum vulgare*), the dwarf orchis (*Orchis ustulata*), the bee orchis (*Ophrys apifera*), the fly orchis (*O. muscifera*), and the upright brome-grass (*Bromus erectus*). The low hills to the east are intersected by picturesque denes and ravines, in the upper part often so confined as to be impassable, and gradually widening as they approach the shore. A rich flora of shade-loving plants clothes the sides and floors of these denes, and many rare species luxuriate under the protection of the sylvan vegetation. Castle Eden Dene, the most considerable and beautiful of them all, is especially noteworthy as sheltering a much prized orchid peculiar to the limestone, the lady's slipper (*Cypripedium Calceolus*), which was once plentifully distributed there, but now requires very careful preservation to save it from extirpation. Some of the rare orchids mentioned above, as well as the narrow-leaved helleborine (*Cephalanthera ensifolia*), are found in the deep recesses of this and other denes of the magnesian limestone.

The coast line of Durham, some forty-five miles in length, lies wholly between the mouths of the rivers Tyne and Tees. Steep grassy slopes alternate with magnesian limestone cliffs, which at Marsden and north of Hartlepool stand out in bold rugged outline; desolate sand dunes stretch along the shore towards the Tees mouth, and are succeeded by salt marshes near Middlesbrough. A long coast line of such varied character is peculiarly favourable for maritime vegetation, and the different physical formations support each their special plant-associations. South of the Tyne lies an open stretch of sand bordered by grass-covered slopes; here in former days were deposited large heaps of ballast from the vessels entering the Tyne. Similar ballast heaps are to be found at Sunderland and Hartlepool. Baker's list includes more than 150 species of plants which have been thus introduced, but he states that it rarely happens that any of these ballast introductions ripen seed and spring up



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a second time, and so when fresh importations cease they rapidly disappear. Baker considers that the wild mignonette (*Reseda lutea*), the wall rocket (*Sinapis tenuifolia*), the wild parsnip (*Pastinaca sativa*), and three or four *Chenopodiaceæ*, are all that are likely to have been introduced in this manner. The sand dunes are covered with the grass-like associations of sand-binding plants specially adapted for this situation by their deep roots and creeping rhizomes. Chief amongst these may be mentioned the sea-reed (*Ammophila arundinacea*), the rushy wheat-grass (*Triticum junceum*), and *T. acutum*, the sea lyme-grass (*Elymus arenarius*), the sea-barley (*Hordeum maritimum*), the sea hard-grass (*Lepturus filiformis*), the creeping fescue-grass (*Festuca rubra*), the hemlock stork's-bill (*Erodium cicutarium*), and the three species of sea sedges—*Carex arenaria*, *C. extensa*, and *C. distans*. A more varied flora is found upon the steep grassy slopes with a wet argillaceous subsoil. Here many plants which are well represented in the vegetation of the upper dales are found in abundance. The graceful 'grass of Parnassus' (*Parnassia palustris*) and the glossy yellowish-green rosettes of the butterwort (*Pinguicula vulgaris*) may be found growing equally well near the Black Hall Rocks and at Langdon Beck. The wild thyme (*Thymus Serpyllum*), the seaside plantain (*Plantago maritima*), and many others, are also similarly distributed. The great water horsetail (*Equisetum maximum*) and *Gentiana Amarella* are again characteristic plants found plentifully here and at a considerable distance inland. Just above the tidal limits some of the most characteristic maritime plants found are: the sea-rocket (*Cakile maritima*), the beet (*Beta maritima*), the sea-purslane (*Honkeneya peploides*), the sea-holly (*Eryngium maritimum*), the hound's-tongue (*Cynoglossum officinale*), and the red goose-foot (*Chenopodium rubrum*). The yellow horned poppy (*Glaucium luteum*) was once plentiful near Seaton Carew, but it is feared that it is now extinct. Peculiar to the salt marshes are the sea-starwort (*Aster tripolium*), the seaside arrow-grass (*Triglochin maritimum*), the sea-blite (*Suaeda maritima*), and the shrubby sea-purslane (*Obione portulacoides*). On the limestone cliffs, the sea spleenwort (*Asplenium marinum*) must be specially mentioned, but it now grows only in the more inaccessible situations.

The district coming within the drainage tract of the Derwent extends to the north of the county. The hills are chiefly composed of millstone grit overlying the carboniferous limestone strata, and in the upper part have much the same undulating heathery character as the fells already considered on the west. The sandstone, however, appears more dominant, and the moors consequently are more thickly clothed with heather, the ling (*Calluna vulgaris*) and *Erica cinerea* being the most abundant species. The brilliant purple of the heather on these vast sweeps of moorland, and in the spring the perfect blaze of yellow broom, produce an impression of vivid glowing colour which is not readily effaced. The common bracken (*Pteris aquilina*) everywhere adds its wealth of orange-coloured fronds in autumn. The mountain buckler fern (*Nephrodium Oreopteris*) grows in great profusion, and sometimes

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clothes the hillsides to the exclusion of all others (Featherstonhaugh), and the hard fern (*Lomaria Spicant*) is also especially plentiful in the hilly districts and on the edges of the moors. At Edmondbyers may be seen growing the rare little pink flower *Erinus alpinus*, which so curiously springs up about the Roman camps. It is supposed to have been brought by Spanish legions, and has thus long survived the old Roman occupation. The limestone is exposed in the bed of the Derwent below Muggleswick, and here the river has carved a deep channel through precipitous banks, and winds in and out through a most romantic and picturesquely wooded retreat locally known as the Sneep. The coal-measures here also first make their appearance, and extend through the lower part of the valley to the mouth of the river. Over a considerable portion of the intervening country, however, thick beds of sand and gravel occur resting upon the boulder clay. This formation results in numerous landslips along the course of the stream, and thousands of tons of ballast have been laid down to counteract the constant undermining of the base of the hills. The Broad Oak Hills are composed of this sand and gravel upon a bed of clay, and as far down as Winlaton can be seen a mass of boulder clay and gravelly drift forming what is known as Winlaton Mill 'scaurs.' Below the Sneep the Vale of Derwent becomes very richly wooded. It possesses large tracts of native woodland, chief among which may be mentioned the extensive Crown lands of Chopwell, where in former days oak was grown for the Royal Navy. In the sheltered denes the oak fern (*Polypodium Dryopteris*) grows profusely, often thickly covering the damp bank sides with its fragile, tender green fronds. The lovely delicate beech fern (*P. Phlegopteris*) is also widely distributed in the valley, selecting wet mossy rocks and places within reach of the waterfalls, where its slender creeping rhizomes can spread themselves over the moist surface. Many of the rarer ferns which once grew luxuriantly have been almost exterminated by ruthless collectors. The royal fern (*Osmunda regalis*), for example, was formerly abundant, but has now no native haunt on the Derwent. Though not possessing many specially rare species, the flora is very rich, and most of the ordinary woodland plants are represented in profusion. The fine large purple flowers of the wood crane's bill (*Geranium sylvaticum*) produce a lovely effect in masses in the woods, and the foxglove (*Digitalis purpurea*) is abundantly dispersed, though it becomes scarce north of the Tyne. The daffodil (*Narcissus Pseudo-narcissus*) grows wild in some of the moist woods, and the rare maiden-pink (*Dianthus deltoides*) in the hilly pastures in the neighbourhood of Shotley Bridge. The woods everywhere are very favourable to fungus flora, those near Medomsley especially possessing innumerable species. The encroachment of paper mills, ironworks, and collieries has destroyed many good plant stations, and below Swalwell the country gives place to a manufacturing district, extending to the Tyne, of no further interest to the botanist.



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## NOTES ON THE BOTANICAL DISTRICTS

*The botanical districts, which are based upon the river basins, are: the Wear, the Tees, and the Derwent.*

### THE WEAR DISTRICT

The drainage tract of the Wear comprises fully one half of the total area of the county, including the main central portion from east to west. The river rises in the highlands of the west, its actual source being the small Scaith Burn issuing from the head of Burnhope Seat, the highest point in the county. At its junction with another burn descending the eastern slope of Deadstones the stream becomes known as the Burnhope Burn, which, flowing rapidly over a very rocky bed and fed by many little tributaries from the mountain sides, soon gathers force and volume. Above Wearhead (1,100 feet) this unites with Kilhope and Welhope burns to form the Wear, which has now attained a very considerable size. Westwards of this point extends the region of wildest moorland vegetation. The flora characteristic of the summits has already been described. *Rubus chamæmorus* is plentifully distributed on all the high peaks, but is seldom found lower than 1,500 feet. On the banks by the streams high up in the hills the wild thyme (*Thymus Serpyllum*) spreads its fragrance everywhere; and *Linum catharticum*, *Euphrasia officinalis*, *Polygala vulgaris*, *Sagina apetala*, *S. nodosa*, *Hypericum pulchrum*, and *Galium saxatile* are freely present on the drier grassy places. Along the more marshy sides of the streams *Sedum villosum*, with its pretty little purplish star-like flowers, *Stellaria uliginosa*, *Saxifraga stellaris*, *Triglochin palustre*, and *Montia fontana*, are noteworthy; while *Veronica scutellata*, *Lychnis flosculi*, *Cochlearia officinalis*, *Ranunculus flammula*, and *Viola palustris* are commonly distributed in the same situations. The swamps abound in species of *Juncus* and *Carex*, with here and there the purple flowers of the marsh orchis (*O. latifolia*) appearing among them. Patches of the pale green rosettes of *Pinguicula vulgaris* are frequently to be seen, as well as *Pedicularis palustris* and *Drosera rotundifolia*. By the brooksides, up to a height of about 1,300 feet, the rich alluvial land left by the stream forms fine natural pastures in which many varieties of grasses and nearly all the common flowers of the English meadows are represented in profusion. An abundance of the beautiful purple and yellow pansy, *Viola lutea*, is a special feature of these upland meadows, and it extends also to the sandy shores near Frosterley, being carried down to the lower reaches of the stream. In the undrained pastures the abundance of *Trollius europæus* and *Caltha palustris* provides a wealth of golden colour; the frog orchis (*Habenaria viridis*) is scattered everywhere, and *Polygonum viviparum* is not unfrequent; *Achillea ptarmica* also occurs, and *Anemone nemorosa* sparingly. *Primula farinosa* grows freely in the marshy places. At Burnhope there is a curious out-crop of black coaly-looking shale where grow quantities of the sweet-scented *Myrrhis odorata*. Close by the cliff is a natural wood of *Betula*, *Corylus*, *Salix*, and *Pyrus aucuparia*. In the undergrowth are found *Pyrola minor*, *Trifolium medium*, *Lathyrus tuberosus*, *Crepis hieracioides*, and *Hieracium gothicum* and *tridentatum*.

The numerous 'hopes,' which shelter many a rare species, are specially characteristic of Weardale. These branch out in all directions from the main valley, extending into the upper heights of the hills. To the west are Kilhope, Welhope, Burnhope, and Ireshope; on the south, Swinhope, Westernhope, and Bollihope; while in a northerly direction the more considerable are Stanhope, Rookhope, and Middlehope. *Taxus baccata* is truly wild in several places in the district. *Botrychium Lunaria*, *Lycopodium clavatum*, *L. alpinum* and *L. Selago* are plants to be noted in the higher localities. *Asplenium viride* grows very abundantly by the burns in Harthope and Ireshope, *A. Trichomanes* ascending to the scars of Bleak Law. Some very picturesque limestone cliffs known as Clint's Crags form an interesting feature in the upper part of Ireshope. Here *Epilobium angustifolium* appears in great profusion, the rocks being enriched with masses of its spikes of purple flowers; the marshes in the neighbourhood are a station for the specially rare yellow *Saxifraga hirculus*. *Selaginella Selaginoides* is found in abundance, and patches of the fragrant orchid, *Habenaria conopsea*. The honeysuckle (*Lonicera periclymenum*) may also be seen growing freely at this height. Many valuable old lead mines exist in the district, for which *Arenaria verna* and *Thlaspi alpestre* have a special predilection; a variety of the latter, *T. occitanum*, is found north of the stream below Eastgate and by the Grasshill lead mines.

At St. John's Chapel the country becomes less wild and begins to assume a more



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pastoral beauty. Between here and Westgate *Rubus villicaulis*, *R. infestus*, *Lycium barbarum*, and *Impatiens balsamifera* may be found. The river is here fairly broad, and as the valley descends it widens considerably towards Stanhope, six miles eastward of St. John's Chapel. High gritstone moors, for the most part clothed with heather, extend on either side of the valley as far as Wolsingham. Stanhope Common lies upwards of 1,000 feet above the town, which itself is some 670 feet above sea-level. It is a large extent of moorland lying on the Millstone Grit above the limestone, which crops out on the hillsides at about 800 to 900 feet. The appearance of the gritstone marks very sharply the boundary between the moor and cultivated ground, the house and walled intakes terminating abruptly at the junction of this strata with the limestone. Heather refuses to grow on the limestone formation, and the vivid green, grassy slopes of the latter thickly covered with trees are in strong contrast to the sudden appearance of the wild, barren-looking heath, and serve to illustrate very strikingly the different character of the two soils. *Calluna vulgaris* forms the main mass of the vegetation of the moor, among which are interspersed *Empetrum nigrum*, *Vaccinium Myrtillus*, *Festuca ovina*, *Juncus squarrosus*, and the procumbent *Galium saxatile*. In the damper spots are *Sphagnum* and *Polytrichum communis*, while the reindeer moss (*Cladonia rangiferina*) is frequently to be seen. Bollihope Burn enters the main stream near Frosterley, and in the lower part of the glen through which it flows the last outcrop of the limestone is exposed to view in the fine cliffs of Bishopley Crag. *Festuca sylvatica*, a rare plant in Durham, grows in Bollihope Dene, and *F. rubra*, usually associated with sandy shores, ascends to 750 feet on Bollihope Moor. Bushes of yellow broom and furze (*Cytisus scoparius* and *Ulex europæus*) brighten the rocky shores of the river; and in the shady woods which now border its banks are beautiful masses of sweet cicely, *Myosotis sylvestris*, the sweetly odorous *Asperula odorata*, and other woodland forms, including *Arum maculatum* and *Orchis mascula*. At Wolsingham the Waskerley Beck flows into the Wear from the north, and a little lower down above Witton-le-Wear the Bedburn, with its many tributaries, enters it on the south. *Scutellaria minor* is plentiful on the Wolsingham moors, and other notable plants known in the same neighbourhood above Shull are the rare *Malaxis paludosa*, *Dianthus deltoides*, and *D. Armeria*, the latter springing up after the ling has been burnt. *Trientalis europæa* and *Convallaria majalis* exist in Shull woods.

From high up in the moors near the Tees a considerable stream runs through the Auckland valley and joins the Wear at Bishop Auckland. Here the main river, which has hitherto taken a course to the south-east, turns sharply northwards, and then continues in a north-easterly direction with many a devious turn till it finally reaches the sea at Sunderland. On the left bank the tributaries of the Deerness and the Browney drain a large extent of moorish coal country. *Bryonia dioica* is not uncommon about Bishop Auckland, and the rare *Gagea lutea* is found in the woods in this locality. *Calamintha Nepeta* should be noted on the banks of the Wear near Durham, and *Atropa belladonna* (the deadly nightshade), as well as the very rare *Colchicum autumnale* in the damp meadows. Leaving Brancepeth Park on its western slope the Wear passes directly through the city of Durham, which occupies a magnificent site on the edge of the moorland, and flows through richly wooded banks past the ruins of Finchale Abbey and the stately parks and castles of Lumley and Lambton. In the flat country and low-lying woods below Durham some of the more interesting plants are the wild daffodil (*Narcissus Pseudo-narcissus*), *Neottia Nidus-avis*, *Rosa arvensis*, *Melica nutans*, *Astragalus glycyphyllos*, and *Limosella aquatica*. For the last four miles the river cuts through the magnesian limestone eastwards to the sea.

The largest area of magnesian limestone is included in this drainage tract. Numerous denes extend into the heart of the range, opening out more widely to the sea. The most extensive is the very beautiful dene of Castle Eden, well known to botanists as a station for the now very rare *Cypripedium Calceolus*. *Taxus baccata* flourishes luxuriantly here, and introductions, such as *Larix leptolepis* and *Rosa rugosa*, have found a congenial home. These sheltered denes of the magnesian limestone afford favourable conditions for the growth of many orchidaceous plants; among the more remarkable species scattered generally in these situations are *Neottia Nidus-avis*, *Epipactis palustris*, *Cephalanthera ensifolia*, and *Ophrys muscifera*. *Ligustrum vulgare*, *Cornus sanguinea*, and *Lithospermum officinale* are truly wild in these denes, and among other plants worthy of mention are *Hypericum montanum*, *Lactuca muralis*, *Erigeron acris*, *Inula Helenium*, *Petasitis fragrans*, *Equisetum maximum*, *Paris quadrifolia*, *Scolopendrium vulgare*, *Daphne laureola*, and *Campanula latifolia*. *Primula farinosa* is frequent about the streams that issue from the magnesian limestone. Dispersed all along the coast are *Orchis ustulata*, *O. pyramidalis* and *Ophrys apifera*.

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## THE TEES DISTRICT

The Tees, rising in Cumberland on the slopes of Cross Fell, first enters Durham at its junction with the Crookburn Beck which flows southwards from Yad Moss. It continues a fairly level course for some miles, spreading into a still expanse of water forming the Weel, in which are found *Potamogeton rufescens* and an abundance of *Ranunculus peltatus*. Immediately below this, at Cauldron Snout, the river contracts into a narrow channel and, falling to a depth of 100 feet, tumbles over a series of rocky ledges. Rushing through a deepening basaltic gorge by a succession of cataracts the turbulent waters at last emerge from the narrow chasm, and by a final leap broaden out, fan-like, into a torrent of boiling foam. The Maze Beck enters just below the Snout, and then the stream flows swiftly over a very rocky bed, taking an irregular winding course to the sea. Beyond the Weel extends a bare, desolate waste of moors with not a tree to be seen, these heights being a part of the main limestone formation. *Carex rigida* and *Epilobium alpinum* are rare plants growing here. On Bleak Law, at an elevation of 1,800 feet, occur *Draba incana*, *Erophila vulgaris*, *Asplenium viride* and *Cystopteris fragilis*. On Widdy Bank Fell a special abundance of very rare plants is found, among them *Gentiana verna*, *Arenaria uliginosa*, *Thalictrum alpinum*, *Potentilla alpestris*, *Viola arenaria*, and *Carex capillaris*. On the north side the fell appears as a rounded sloping hill, the summit covered with heather. Heather clothes also the steep cliffs which face the Tees and which terminate to the south-west by perpendicular basaltic crags known as the Falcon Clints. Among the talus of sharp rocks some of the familiar plants which it is interesting to observe have established themselves are : *Oxalis acetosella*, *Geranium Robertianum* and *lucidum*, *Asplenium Adiantum-nigrum*, *Pteris aquilina* and *Polypodium vulgare*; the rare *Saxifraga aizoides* and *hypnoides* and *Sedum telephium* are also plentifully seen. Juniper bushes cling to the crevices of the basaltic columns with here and there a solitary mountain ash, while *Solidago virgaurea*, *Teucrium Scorodonia*, *Fragaria vesca*, *Corylus Avellana*, *Sanguisorba officinale*, *Digitalis purpurea* and *Campanula rotundifolia* find a home among the rocks and heather. On these clints also many special species appear, such as *Woodsia ilvensis*, *Aspidium Lonchitis*, *Potentilla alpestris*, *Arctostaphylos Uva-ursi*, *Juncus triglumis*, *Kobresia caricina*, *Hieracium iricum*, *H. anglicum* and *H. pallidum*. To these may be added others, all noteworthy, growing on the banks of the various streams which flow outwards from Widdy Bank Fell, such as *Bartsia alpina*, *Sedum villosum*, *Saxifraga stellaris*, *Galium boreale*, *G. Sylvestre*, *Sesleria cærulia*, *Cryptogramme crispa*, *Polypodium calcareum*, *Equisetum variegatum*, *Poa Parnellii*, *Tofieldia palustris* and *Scirpus pauciflorus*. *Armeria maritima* is found plentifully on one of the little streams running from the sugar limestone.

This upper drainage tract of the Tees is separated into two distinct dales, the one formed by the Tees itself and the other by the Harwood Beck running almost parallel with it from north to south. Langdon Beck flows in the same direction through a narrower valley to the west, and taking a south-easterly turn joins Harwood Beck at Langdon Bridge. Their united streams flowing southwards meet with the Tees about a mile above High Force. At this meeting of the waters on the flat piece of ground known as the Whetstone Sill *Potentilla fruticosa*, an extremely rare plant, grows most luxuriantly. The peculiarly rare *Bartsia alpina* grows here too, but most abundantly a little higher up by the Whey Sike, and from the Widdy Bank streams it is carried down to Harwood Beck. *Habenaria albida* is found plentifully near the same point, as well as *Hieracium gothicum*, *corymbosum*, and *crocatum*, all rare species, extending also for some distance down the stream. It is difficult to tread anywhere hereabouts without finding a profusion of *Gentiana Amarella*. In Harwood Dale numerous species of the commoner lowland plants ascend to a considerable altitude. To give a few instances : *Lychnis diurna*, *Geranium sylvaticum*, *Spiræa ulmaria*, *Ajuga reptans*, and *Briza media*, are found on the limestone scars at an elevation of 1,650 feet; *Pedicularis palustris* and *Plantago media* attain a limit of 1,700 feet, *Poa trivialis* 1,800 feet, while *Listera ovata*, *Rumex crispus*, *Achillea ptarmica*, and *Apargia bispida* reach a limit of 1,950 feet. *Trollius europæus* and *Galthia palustris* form a very conspicuous feature of Teesdale, spreading themselves in quantity over the whole valley above High Force. The deep blue Swiss gentian (*Gentiana verna*) is abundantly distributed in several places, Fendrith Hill, Widdy Bank Fell, and above Cauldron Snout being favourite localities of this lovely flower. *Primula farinosa* also grows in plenty in the marshy places, especially about Langdon Dale. The very rare *Vaccinium uliginosum* occurs sparingly on the boggy parts of the moor above High Force, and in the drier more sandy ground *Juncus montana* has established a home.

From Cauldron Snout to the head of High Force the river declines in level 430 feet, and then rushes in a great sheet of foam over a precipice some 78 feet high, forming a very



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beautiful waterfall. Perpendicular rocks line the sides of the stream for some distance, and the banks are still craggy and precipitous almost as far down as Middleton. The river receives four feeders from the north between High Force and Egglestone—the burns of Ettersgill, Bowlees, Hudshope, and Eggleburn, in the first of which there is a pretty little waterfall called Hell Cleft. *Saxifraga aizoides* appears again on the rocks towards High Force, and some other of the rarer plants on Widdy Bank are carried down as far as Eggleston, a distance of some seven miles. *Hieracium anglicum*, *H. iricum*, *Potentilla alpestris* and *Thalictrum alpinum* descend to Winch Bridge, a favourite station for some of the stray plants from the heights of Falcon Clints; the rare horsetail, *Equisetum umbrosum*, is found as low as Middleton, and *Saxifraga stellaria* reaches to Eggleston. The flora beyond this point is of a more ordinary woodland type. *Aquilegia vulgaris* should be noted truly wild in the vicinity of Middleton, and *Pyrus Aria* at Winch Bridge. The woods near High Force contain a very rich vegetation. A great wealth of many-coloured lichens clothes the black smooth rocks and trunks of the trees, masses of the curious green lichen, *Usnea barbata*, depend from many of the branches, and a rich fungus-flora is found in the damp, decaying undergrowth. The wild raspberry (*Rubus idæus*) is common, and the lily of the valley (*Convallaria majalis*) is plentiful in the shade of the woods, as well as *Paris quadrifolia*, *Myosotis sylvestris*, and the large *Campanula latifolia*. Below High Force the valley descends rapidly and soon becomes well-wooded, though still girdled by the high ridges of Newbiggin (2,215 feet), Middleton (1,990 feet), and Eggleston (1,590 feet) moors. A stream rising north of Barnard Castle on the edge of the moors at Langley Dale flows through Raby to Staindrop, where it is joined by one flowing through Streatlam Park, and their united waters enter the main river near Gainford, a station for *Turritis glabra*. The limestone reappears below Barnard Castle, and fine cliffs border the Tees for some miles. *Rumex aquaticus* is an uncommon northern plant descending the dale from Widdy Bank to Barnard Castle; it is also recorded at Piercebridge (Wheldon).

From Piercebridge, where the magnesian limestone commences, right to the Tees mouth, the river traverses flat low country through which flow many sluggish tributaries. It follows a very winding course, and between Croft and Dinsdale twists and turns in truly serpentine fashion. The damp woods in this district provide many specially rare plants, among which may be mentioned *Colchicum autumnale*, *Iris fetidissima*, *Ophrys apifera*, *O. muscifera*, *Orchis ustulata*, *Allium scorodoprasum*, and *Ruscus aculeatus*. Other noticeable plants in the locality are: *Chenopodium glaucum*, *Spiræa Filipendula*, *Stachys ambigua*, *Euonymus europæus*, *Trifolium fragiferum*, *Bryonia dioica*, *Hypericum Androsæmum*, *Linum perenne*, and *Symphytum officinale* and *Rhamnus catharticus*, both rare in the county. *Viola odora* is frequent in the woods. The slowly running streams and ditches of this flat country furnish an abundance of aquatic plants, a number of which have already been mentioned in connection with the Skerne and Morden Carrs. The becks in the neighbourhood of Stockton, Norton, Billingham, and Greatham also provide good stations for such plants. *Sparganium ramosum*, *S. simplex*, *Typha latifolia*, *T. angustifolia*, *Cenante phellandrium*, *Zannichellia palustris*, *Nasturtium sylvestre*, *N. terrestre*, *Samolus valerandi*, *Potamogeton plantagineus*, *P. densus*, and *P. gramineus* are among those not given previously. In the salt marshes at the mouth of the Tees and salt-water ditches along the coast are: *Obione portulacoides*, *Aster tripolium*, *Statice limonium*, *Ranunculus Baudotii*, *Artemisia maritima*, *Salicornia herbacea*, *Sueda maritima*, *Atriplex littoralis*, *Triglochin maritimum*, *Ruppia maritima*, *Agrostis alba*, *Juncus maritima*, *J. compressus*, *Scirpus rufus*, *glaucus*, and *maritimus*. To the previous list of plants growing on the sand-dunes the following may be added: *Glaux maritima*, *Armeria maritima*, *Plantago coronopus*, *Atriplex portulacoides*, *A. Babingtonii*, *Glyceria distans*, *G. procumbens*, *G. loliacea*, *Thalictrum minus*, *Seneberia coronopus*, and *Salsola Kali*. Growing in the sea are the two monocotyledonous plants, *Zostera marina* and *Z. nana*.

### THE DERWENT DISTRICT

For the greater part of its course the Derwent forms the northern limit of the county, only a small area to the north-east extending the boundary along the Stanley Burn to the Tyne at Wylam. The river takes its rise by two branches, the Knucton Burn on the south and the Beldon Burn on the north. The latter rises beyond the county limit near to Allenheads, the high ridge of Knucton Edge which separates the two streams forming the western confines of the district. At the head of Knucton Burn the ridge attains a height of 1,833 feet, and from this a range of high fells extends for several miles due east to Bolt's Law, which has an elevation of 1,772 feet. Some interesting plants may be



## A HISTORY OF DURHAM

found on the banks of the Beldon and Knucton Burns, such as *Salix laurina*, *S. nigricans*, *Narthecium ossifragum*, *Galium boreale*, *Saxifraga stellaris*, and *S. aizoides*. *Vicia cracca* and *Oxalis acetosella* are common lowland plants ascending to 1,500 feet, nearly to the source of the Knucton Burn. A little lower down, at Bay Bridge, Bolt's Burn joins the main stream. At this height, for the distance of a mile along the side of the Derwent, extends a narrow belt of pasture land and dense wood. A fine profusion of the mountain pansy, *Viola lutea*, is again met with here. The high ground above Blanchland and Edmondbyers provides some of the rarest plants in the district.<sup>1</sup> *Vaccinium Oxycoccus* and *Rubus chamæmorus* occur, though not very plentifully, as well as *Bartsia alpina*, *Apium graveolens*, *Parnassia palustris*, *Anagallis tenella*, and *Malaxis paludosa*. In the woods at Roughside are *Carduus heterophyllus*, *Pyrola media*, and *Trientalis europæa*. Among orchidaceous plants the butterfly orchis (*Habenaria bifolia*), *H. albida*, *H. viridis*, *Orchis latifolia*, *Gymnadenia conopsea*, and *Epipactis latifolia* are all to be found in the locality. The next important stream to be received is the Burnhope Burn, which, taking its rise in Bolt's Law, drains Muggleswick Common and the valley between Edmondbyers and Muggleswick. The woods in this neighbourhood are a very profitable botanical hunting ground, the seam of mountain limestone which appears here supporting plants favouring this formation. *Ligustrum vulgare*, plentiful on the magnesian limestone of the coast and indigenous only on calcareous ground, is to be found in these woods. *Primula farinosa* grows in several localities hereabouts, and *Listera cordata* on the Muggleswick Moors. Some little distance lower down, the Hyshope Burn and the Horsleyhope Burn, both issuing from the fells above Muggleswick, unite to pour their waters into the main stream. It is near this point that the main limestone appears in the bed of the Derwent. The tortuous windings of the river here traverse the picturesquely wooded district of the Sneepe, where *Neottia Nidus-avis* may be found growing among the rich humus of the rotting leaves.

Turning north the stream now leaves the vast sweep of moorland behind and proceeds for nearly the whole of its further course through a piece of country of great sylvan beauty. On the high ground on the east bank the collieries and iron-works which have sprung up have laid waste a considerable area, and the paper-mills, which pollute the stream in the beautiful neighbourhood of Shotley Bridge, may have affected some plant stations. The somewhat rare *Dianthus deltoides*, however, is still found in the hilly pastures near Shotley Bridge [its only other locality in the district being a pasture field near Edmondbyers (Featherstonhaugh)] and *Narcissus Pseudo-narcissus* grows wild in considerable quantity at Allansford, as well as *Aquilegia vulgaris*. *Orobancha major* is frequently found in this neighbourhood parasitic upon the broom. The many species of ferns which grow so luxuriantly in the shady woods of the Derwent are treated separately, and few of the numerous woodland plants merit special mention. A deep rose-coloured variety of *Anemone nemorosa*, the tint of which remains permanent under cultivation, is found in a wood near Shotley (Featherstonhaugh). Some uncommon plants are met with in Gibside Woods. The lily of the valley (*Convallaria majalis*) and *Carduus heterophyllus* may be mentioned as growing here, the latter also to be found in several places on the banks of the Derwent.

Considerable tracts of land in the district are occupied by flourishing plantations, fine belts of fir trees predominating in the upper reaches of the valley. The most extensive natural woods are those of Chopwell and Gibside. Axwell Park, approaching within a mile of Derwenthaugh where the river flows into the Tyne, also contains some magnificent beeches; the white water-lily (*Nymphæa alba*) grows in a pond in the park, and *Stachys ambigua* is a plant worth mentioning which finds a home there. A species of horsetail, *Equisetum hyemale*, rare in the county, may be found in the boggy woods on the banks of the stream in its lower reaches. On the west side of the river, and parallel with it, a small stream runs through a wooded dene to the Tyne at Blaydon. On the east side the Team drains the coal country south of Newcastle, the finely timbered park at Ravensworth forming a pleasant feature on its banks. Many interesting plants were once known in the vicinity of Gateshead, south of the Tyne—*Selaginella Selaginoides*, for example, on Gateshead Fell—but they are long since exterminated, the stations being built over or destroyed by the smoky, deleterious atmosphere. All plant-life in close proximity to the Tyne is now injuriously affected by the manufactories and chemical works on its banks.

<sup>1</sup> Most of the species here enumerated are recorded by the Rev. W. Featherstonhaugh. *Transactions of the Vale of Derwent Naturalists' Field Club*, iv.

# BOTANY

## A LIST OF THE FLOWERING PLANTS OF DURHAM

### OBSERVATIONS

The order and nomenclature of the following list are those of Sir J. D. Hooker's *Student's Flora of the British Islands*, 3rd Edition, 1884. The numbers after the specific names refer to the zones of altitude. The authorities made use of in this account are the admirable *Flora of Northumberland and Durham*, by Baker and Tate,<sup>1</sup> and Winch's *Essay on the Geographical Distribution of Plants through the counties of Northumberland, Cumberland and Durham* (1825), together with the author's own observations. The list of flowering plants and ferns is that of Baker's *Flora*; the species marked \* are added from a list by Mr. J. A. Wheldon. Mr. W. Ingham, B.A., has been kind enough to contribute the sections on Mosses and Liverworts, and the Rev. W. Johnson that on the Lichens.

### LIST OF FLOWERING PLANTS

#### DICOTYLEDONES.

##### RANUNCULACEÆ

- Thalictrum alpinum*, L. 2
- *minus*, L. 1
- *flexuosum*, Reich. 1
- *flavum*, L. 1
- Anemone nemorosa*, L. 1, 2
- Adonis autumnalis*, L. Alien. 1
- Myosurus minimus*, L. 1
- Ranunculus heterophyllus*, Fries. 1, 2
- *marinus*, Fries., var. *Baudotii*, Godr. 1
- *fluitans*, Lamk. 1
- *hederaceus*, L. 1
- *lingua*, L. 1
- *flammula*, L. 1, 2
- *auricomus*, L. 1, 2
- *sceleratus*, L. 1
- *acris*, L. 1, 2, 3
- *repens*, L. 1, 2, 3
- *bulbosus*, L. 1, 2
- *arvensis*, L. 1
- *ficaria*, L. 1, 2
- *parviflorus*, L. 1
- Caltha palustris*, L. 1, 2, 3
- Trollius europæus*, L. 1, 2, 3
- Helleborus foetidus*, L. 1
- *viridis*, L. 1
- Aquilegia vulgaris*, L. 1
- Delphinium Ajacis*, L. Alien. 1

##### BERBERIDEÆ

- Berberis vulgaris*, L. 1

##### NYMPHÆACEÆ

- Nuphar luteum*, Sm. 1

##### PAPAVERACEÆ

- Papaver hybridum*, L. Colonist. 1
- *argemone*, L. Colonist. 1

##### PAPAVERACEÆ (continued)

- Papaver dubium*, L. Colonist. 1
- *rhœas*, L. Colonist. 1
- *somniferum*, L. Alien. 1
- Chelidonium majus*, L. 1
- Glaucium luteum*, Scop. 1

##### FUMARIACEÆ

- Fumaria capreolata*, L. Colonist. 1
- sub-sp. \**confusa*, Jord.
- var. *Boræi*, Jord.
- „ *pallidiflora*, Jord.
- *officinalis*, L. Colonist. 1
- Corydalis claviculata*, DC. 1

##### CRUCIFERÆ

- Cheiranthus Cheiri*, L. Alien. 1
- Nasturtium officinale*, R. Br. 1, 2, 3
- *sylvestre*, R. Br. 1
- *palustre*, DC. 1
- Barbarea vulgaris*, R. Br. 1
- *præcox*, R. Br. Alien. 1
- Arabis hirsuta*, R. Br. 1, 2
- *perfoliata*, Lamk. 1
- Cardamine hirsuta*, L. 1, 2, 3
- sub-sp. *flexuosa*, With.
- *pratensis*, L. 1, 2, 3
- *amara*, L. 1
- Sisymbrium thaliana*, Hook. 1, 2
- *Sophia*, L. 1
- *officinale*, Scop. 1
- *alliaria*, Scop. 1
- Hesperis matronalis*, L. Alien. 1
- Brassica campestris*, L.
- sub-sp. *rapa*, L. Colonist. 1, 2, 3
- „ *napus*, L. Colonist. 1, 2, 3
- *nigra*, L. Colonist. 1
- *sinapis*, Visiani. Colonist. 1, 2
- *alba*, Boiss. Colonist. 1, 2

<sup>1</sup> *Natural History Transactions of Northumberland and Durham*, ii., 1867-68.

# A HISTORY OF DURHAM

## CRUCIFERÆ (*continued*)

- Diploxaxis tenuifolia*, DC. 1
- Draba incana*, L. 2
- Erophila vulgaris*, DC. 1, 2
- Cochlearia officinalis*, L. 1, 2, 3
  - sub-sp. *alpina*, Wats.
  - „ *danica*, L.
- *anglica*, L. 1
- Capsella Bursa-Pastoris*, Moench. 1, 2
- Senebiera coronopus*, Poir. 1
- *didyma*, Pers. Alien.
- Lepidium latifolium*, L. 1
- *campestre*, R. Br. 1
  - sub-sp. *Smithii*, Hook. 1
- Thlaspi arvense*, L. 1
- *alpestre*, L. 1, 2, 3
  - var. *sylvestre*, Jord.
  - „ *occitanum*, Jord.
- Cakile maritima*, Scop. 1
- Raphanus Raphanistrum*, L. 1, 2

## RESEDACEÆ

- Reseda luteola*, L. 1
- *lutea*, L. 1

## CISTINEÆ

- Helianthemum vulgare*, L. 1, 2, 3

## VIOLACEÆ

- Viola palustris*, L. 1, 2, 3
- *odorata*, L. 1
- *hirta*, L. 1
- *canina*, L. 1
- *sylvatica*, Fries. 1, 2, 3
- *arenaria*, DC. 2
- *tricolor*, L. 1, 2
  - sub-sp. *lutea*, Huds. 1, 2, 3

## POLYGALEÆ

- Polygala vulgaris*, L. 1, 2, 3

## CARYOPHYLLEÆ

- Dianthus Armeria*, L. 1
- *deltoides*, L. 1
- Saponaria officinalis*, L. 1
- Silene maritima*, With. 1, 2
- *Cucubalus*, Wibel. 1
- *noctiflora*, L. 1
- Lychnis Flos-cuculi*, L. 1, 2, 3
- *diurna*, Sibth. 1, 2
- *vespertina*, Sibth. 1
- Githago segetum*, Desf. 1, 2
- Cerastium quaternellum*, Fenzl. 1
  - *tetrandrum*, Curtis. 1
  - *semidecandrum*, L. 1
  - *glomeratum*, Thuill. 1, 2
  - *triviale*, Link. 1, 2, 3
  - *arvense*, L. 1
- Stellaria nemorum*, L. 1, 2
- *\*aquatica*, Scop.
- *media*, Vill. 1, 2, 3
- *Holosteia*, L. 1, 2
- *palustris*, Ehrh. 1

## CARYOPHYLLEÆ (*continued*)

- Stellaria graminea*, L. 1, 2
- *uliginosa*, Murr. 1, 2, 3
- Arenaria verna*, L. 1, 2, 3
- *uliginosa*, Schl. 2
- *trinervis*, L. 1
- *serpyllifolia*, L. 1
- *peploides*, L. 1
- Sagina apetala*, L. 1
  - sub-sp. *maritima*, Don. 1
- *procumbens*, L. 1, 2, 3
- *nodosa*, E. Mey. 1, 2, 3
- Spergula arvensis*, L. 1
- Spergularia rubra*, Pers. 1
- *salina*, Presl. 1
- *media*, Pers. 1

## PORTULACEÆ

- Montia fontana*, L. 1, 2, 3
- var. *rivularis*, Gmel.

## HYPERICINEÆ

- Hypericum Androsæmum*, L. 1
- *perforatum*, L. 1
- *quadrangulum*, L. 1, 2
- *humifusum*, L. 1, 2
- *pulchrum*, L. 1, 2
- *hirsutum*, L. 1
- *montanum*, L. 1
- *calycinum*, L. Alien

## MALVACEÆ

- Malva sylvestris*, L. 1
- *rotundifolia*, L. 1
- *moschata*, L. 1

## TILIACEÆ

- Tilia vulgaris*, Hayne. 1

## LINEÆ

- Linum perenne*, L. 1
- *catharticum*, L. 1, 2

## GERANIACEÆ

- Geranium sanguineum*, L. 1
- *sylvaticum*, L. 1, 2
- *pratense*, L. 1, 2
- *molle*, L. 1, 2
- *pusillum*, L. 1
- *columbinum*, L. 1
- *dissectum*, L. 1
- *Robertianum*, L. 1, 2
- *phæum*, L. Alien. 1
- *lucidum*, L. 1, 2
- Erodium cicutarium*, Sm. 1
- Oxalis acetosella*, L. 1, 2, 3

## ILICINEÆ

- Ilex Aquifolium*, L. 1

## EMPETRACEÆ

- Empetrum nigrum*, L. 1, 2, 3

## CELASTRINEÆ

- Euonymus europæus*, L. 1



# BOTANY

## RHAMNÆ

*Rhamnus catharticus*, L. 1

## SAPINDACEÆ

*Acer campestre*, L. 1

— *pseudo-platanus*, L. 1, 2

## LEGUMINOSÆ

*Genista tinctoria*, L. 1

— *anglica*, L. 1

*Ulex europæus*, L. 1, 2

— *nanus*, L. sub. sp. *Gallii*, Planch. 1

*Cytisus scoparius*, Link. 1, 2

*Ononis spinosa*, L. 1, 2

— *antiquorum*, L. 1

*Medicago sativa*, L. Alien

— *lupulina*, L. 1, 2

— *\*falcata*, L.

*Melilotus officinalis*, Desr. 1

*Trifolium arvense*, L. 1

— *pratense*, L. 1, 2, 3

— *medium*, L. 1, 2

— *striatum*, L. 1

— *scabrum*, L. 1

— *repens*, L. 1, 2, 3

— *fragiferum*, L. 1

— *procumbens*, L. 1

— *dubium*, Sibth. 1

— *filiforme*, L. 1

*Anthyllis vulneraria*, L. 1, 2

*Lotus corniculatus*, L. 1, 2

var. *major*, Scop. 1, 2

*Astragalus glycyphyllos*, L. 1

— *hypoglottis*, L. 1

*Ornithopus perpusillus*, L. 1

*Onobrychis sativa*, Lam. 1

*Vicia hirsuta*, Koch. 1

— *tetrasperma*, Koch. 1

— *Cracca*, L. 1, 2

— *sylvatica*, L. 1

— *sepium*, L. 1

— *sativa*, L. 1, 2

— *lathyroides*, L. 1

*Lathyrus pratensis*, L. 1, 2

— *macrorrhizus*, Wimm. 1, 2

## ROSACEÆ

*Prunus communis*, Huds. 1

— *Avium*, L. 1, 2

— *padus*, L. 1, 2

*Spiræa Ulmaria*, L. 1, 2

— *Filipendula*, L. 1

— *salicifolia*, L. Alien. 1

*Rubus Chamæmorus*, L. 2, 3

— *saxatilis*, L. 1, 2

— *Idæus*, L. 1, 2

— *fruticosus*, L.

sub-sp. *suberectus*, And. 1, 2

var. *plicatus*, Weihe

sub-sp. *Rhamnifolius* (*cordyfolius*, Weihe). 1

„ *corylifolius*, Sm. 1

## ROSACEÆ (continued)

*Rubus fruticosus* (continued)

sub-sp. *cæsius*, L. 1

„ *discolor*, Weihe. 1

„ *leucostachys*, Sm. 1

„ *villicaulis*, Weihe. 1

„ *umbrosus*, Arrh. 1

„ *radula*, Weihe. 1

„ *Kochleri*, Weihe. 1

var. *infestus*, Weihe. 1

„ *pallidus*, Weihe. 1

*Geum urbanum*, L. 1, 2

— *rivale*, L. 1, 2, 3

var. *\*intermedium*, Ehrh.

*Fragaria vesca*, L. 1, 2

*Potentilla fruticosa*, L. 1, 2

— *comarum*, L. 1, 2, 3

— *tomentilla*, Nesl. 1, 2, 3

— *anserina*, L. 1, 2

— *reptans*, L. 1

— *fragariastrum*, Ehrh. 1, 2

— *salisburgensis*, Haenke. 1, 2

— *argentea*, L. 1

*Alchemilla arvensis*, Lam. 1

— *vulgaris*, L. 1, 2, 3

*Agrimonia Eupatoria*, L. 1

*Poterium sanguisorba*, L. 1

— *officinale*, Hook. 1, 2

*Rosa spinosissima*, L. 1, 2

— *villosa*, L. 1, 2

sub-sp. *tomentosum*, Sm. 1, 2

— *rubiginosa*, L. 1

— *canina*, L. 1, 2

var. *lutetiana*, Leman.

„ *dumalis*, Bechst.

„ *urbica*, Leman.

„ *dumetorum*, Thuill.

„ *Borreri*, Woods. 1

— *involuta*, Sm. 1

var. *sabini*, Woods. 1

„ *Robertsoni*, Baker. 1

— *arvensis*, Huds. 1

— *hibernica*, Smith. 1

var. *cordifolia*, Baker. 1

*Pyrus Malus*, L. 1, 2

— *Aria*, Sm. 1

var. *rupicola*, Syme

— *Aucuparia*, Gært. 1, 2

*Cratægus oxyacantha*, L. 1, 2

sub-sp. *monogyna*, Jacq.

## SAXIFRAGÆ

*Saxifraga stellaris*, L. 1, 2, 3

— *Hirculus*, L. 2

— *aizoides*, L. 1, 2

— *tridactylites*, L. 1

— *granulata*, L. 1, 2

— *hypnoides*, L. 2, 3

*Chrysosplenium alternifolium*, L. 1, 2

— *oppositifolium*, L. 1, 2, 3

# A HISTORY OF DURHAM

## SAXIFRAGEÆ (continued)

- Parnassia palustris*, L. 1, 2
- Ribes grossularia*, L. 1
- *alpinum*, L. 1
- *rubrum*, L. 1, 2
- var. *petræum*, Sm.
- *nigrum*, L. 1

## CRASSULACEÆ

- Sedum telephium*, L. 1, 2
- var. *purpureum*, Tausch. 2
- *villosum*, L. 1, 2
- *album*, L. 1, Alien
- *acre*, L. 1, 2
- *rupestre*, Huds. Alien
- *reflexum*, L. Alien
- Sempervivum tectorum*. Alien

## DROSERACEÆ

- Drosera rotundifolia*, L. 1, 2

## HALORAGACEÆ

- Hippuris vulgaris*, L. 1
- Myriophyllum verticillatum*, L. 1
- *spicatum*, L. 1
- Callitriche verna*, L. 1, 2
- sub-sp. *platycarpa* Kutz. 1, 2
- „ *pedunculata*, DC. 1, 2

## LYTHRARIÆ

- Lythrum salicaria*, L. 1
- Peplis portula*, L. 1

## ONAGRARIÆ

- Epilobium angustifolium*, L. 1, 2
- *hirsutum*, L. 1
- *parviflorum*, Schreb. 1, 2
- *montanum*, L. 1, 2
- *roseum*, Schreb. Alien. 1
- *palustre*, L. 1, 2
- *obscurum*, Schreb. 1, 2
- *alsinefolium*, Vill. 1, 2, 3
- *anagallidifolium*, Lam. 2, 3
- Circea lutetiana*, L. 1

## CUCURBITACEÆ

- Bryonia dioica*, L. 1

## UMBELLIFERÆ

- Hydrocotyle vulgaris*, L. 1
- Eryngium maritimum*, L. 1
- Sambucus europæa*, L. 1
- Comum maculatum*, L. 1
- Smyrnum olusatrum*, L. 1
- Bupleurum rotundifolium*, L. 1
- *tenuissimum*, L. 1
- Apium graveolens*, L. 1
- *nobiliorum*, Reich. 1
- *inundatum*, Reich. 1
- Carum Carui*, L. Alien. 1
- *petroelinum*, Benth. Alien
- Sium angustifolium*, L. 1
- Thapsodium podocarpa*, L. 1, 2
- Pimpinella saxifraga*, L. 1, 2
- *major*, Huds. 1

## UMBELLIFERÆ (continued)

- Conopodium denudatum*, Koch. 1, 2, 3
- Myrrhis odorata*, Scop. 1, 2
- Scandix pecten-Veneris*, L. Colonist. 1, 2
- Chærophylloides temulum*, L. 1
- Anthriscus vulgaris*, Pers. 1
- *sylvestris*, Hoffm. 1, 2, 3
- sub-sp. *cerefolium*, Hoffm.
- *\*Fœniculum officinale*, All.
- Œnanthe fistulosa*, L. 1
- *Lachenalii*, Gmel. 1
- *crocata*, L. 1
- *phellandrium*, Lam. 1
- Æthusa Cynapium*, L. 1
- Silaus pratensis*, Bess. 1
- Angelica sylvestris*, L. 1, 2
- Peucedanum ostruthium*, Koch. Alien
- *sativum*, Benth. 1
- Heracleum Sphondylium*, L. 1, 2
- Daucus carota*, L. 1
- Caucalis daucoides*, L. Colonist.
- *anthriscus*, Huds. 1, 2
- *nodosa*, Scop. 1

## ARALIACEÆ

- Hedera Helix*, L. 1, 2

## CORNACEÆ

- Cornus sanguinea*, L. 1

## CAPRIFOLIACEÆ

- Viburnum Lantana*, L. Alien
- *Opulus*, L. 1, 2
- Sambucus Ebulus*, L. 1
- *nigra*, L. 1
- Adoxa Moschatellina*, L.
- Lonicera Periclymenum*, L. 1, 2
- *Xylosteum*, L. Alien

## RUBIACEÆ

- Galium verum*, L. 1, 2
- *Cruciata*, Scop. 1, 2
- *palustre*, L. 1, 2, 3
- *uliginosum*, L. 1, 2
- *saxatile*, L. 1, 2, 3
- *sylvestre*, Poll. 1, 2
- *Mollugo*, L. 1
- sub-sp. *\*erectum*, Huds.
- *boreale*, L. 1, 2
- *Aparine*, L. 1, 2
- *tricornis*, With. 1
- Asperula odorata*, L. 1, 2
- Sherardia arvensis*, L. 1

## VALERIANEÆ

- Valeriana dioica*, L. 1, 2, 3
- *officinalis*, L. 1, 2
- Valerianella olitoria*, Moench. 1
- *dentata*, Poll. 1

## DIPSACÆ

- Dipsacus sylvestris*, L. 1
- Scabiosa succisa*, L. 1, 2
- *Columbaria*, L. 1, 2
- *arvensis*, L. 1

# BOTANY

## COMPOSITÆ

- Eupatorium cannabinum, L. 1
- Aster tripolium, L. 1
- Erigeron acre, L. 1
- Bellis perennis, L. 1, 2, 3
- Solidago Virgaurea, L. 1, 2
- Inula Helenium, L. 1
- Pulicaria dysenterica, Gært. 1
- Gnaphalium sylvaticum, L. 1
- uliginosum, L. 1
- Antennaria dioica, Br. 1, 2
- Filago germanica, L. Colonist. 1
- minima, Fries. 1
- Bidens cernua, L. 1
- tripartita, L. 1
- Anthemis arvensis, L. Colonist. 1
- Cotula, L. Colonist. 1
- nobilis, L. 1
- Achillea Ptarmica, L. 1, 2, 3
- Millefolium, L. 1, 2, 3
- Matricaria Chamomilla, L. 1
- inodora, L. 1
- var. maritima, L. 1
- Chrysanthemum segetum, L. Colonist
- Leucanthemum, L. 1, 2
- Parthenium, Pers. 1
- Tanacetum vulgare, L. 1
- Artemisia vulgaris, L. 1, 2
- Absinthium, L. 1, 2
- maritima, L. 1
- Petasites vulgaris, Desf. 1
- Tussilago Farfara, L. 1, 2, 3
- Doronicum Pardalianches, L. Alien
- Senecio vulgaris, L. 1, 2
- sylvaticus, L. 1
- viscosus, L. 1
- Jacobæa, L. 1, 2
- erucæfolius, L. 1
- aquaticus, Huds. 1, 2
- Arctium Lappa, L. 1
- sub-sp. minus, Schk. 1, 2
- Carlina vulgaris, L. 1, 2
- Centaurea nigra, L. 1, 2
- Scabiosa, L. 1
- Cyanus, L. Colonist. 1
- solstitialis, L. Alien
- Serratula tinctoria, L. 1
- Carduus nutans, L. 1
- crispus, L. 1, 2
- pycnocephalus, Jacq. 1
- Cnicus lanceolatus, Hoffm. 1, 2
- eriophorus, Hoffm. 1, 2
- arvensis, Hoffm. 1, 2, 3
- sub-sp. \*setosus, Bess.
- palustris, Hoffm. 1, 2
- heterophyllus, Willd. 1, 2
- Onopordium Acanthium, L. Alien
- Cichorium Intybus, L. 1
- Lapsana communis, L. 1, 2
- Picris hieracioides, L. 1

## COMPOSITÆ (continued)

- Picris echioides, L. 1
- Crepis virens, L. 1
- taraxacifolia, Thuill. 1
- hieracioides, Waldst. & Kit. 1, 2
- paludosa, Moench. 1, 2, 3
- Hieracium Pilosella, L. 1, 2, 3
- Anglicum, Fries. 1, 2
- sub-sp. Iricum, Fries. 1, 2
- murorum, L. 1, 2
- sub-sp. cæsius, Fries. 1, 2
- sub-sp. pallidum, Fries. 1, 2
- sylvaticum, Sm. 1, 2, 3
- sub-sp. gothicum, Fries. 1, 2
- sub-sp. tridentatum, Fries. 1, 2
- prenanthoides, Vill. 1
- umbellatum, L. 1
- crocatum, Fries. 1, 2
- sub-sp. corymbosum, Fries. 1, 2
- boreale, Fries. 1, 2
- Hypochoeris radicata, L. 1, 2
- Leontodon hirtus, L. 1
- hispidus, L. 1, 2, 3
- autumnalis, L. 1, 2, 3
- Taraxacum officinale, Web. 1, 2, 3
- var. palustre, DC.
- var. lævigatum, DC.
- Lactuca virosa, L. 1
- muralis, Fresen. 1
- Sonchus arvensis, L. 1
- oleraceus, L. 1
- sub-sp. asper, Hoffm.
- Tragopogon pratensis, L. 1, 2

## CAMPANULACEÆ

- Jasione montana, L. 1, 2
- Campanula rotundifolia, L. 1, 2, 3
- Rapunculus, L. Alien. 1
- latifolia, L. 1, 2
- rapunculoides, L. Alien
- glomerata, L. 1
- Specularia hybrida, DC. Colonist

## ERICACEÆ

- Vaccinium Myrtillus, L. 1, 2, 3
- uliginosum, L. 1, 2, 3
- Vitis-idæa, L. 1, 2, 3
- Oxycoccus, L. 1, 2, 3
- Arctostaphylos Uva-ursi, Spreng. 1, 2
- Erica Tetralix, L. 1, 2, 3
- cinerea, L. 1, 2
- Calluna vulgaris, Salis. 1, 2, 3
- Pyrola minor, L. 1, 2
- media, Suz. 1
- rotundifolia, L. 1

## PLUMBAGINEÆ

- Armeria vulgaris, Willd. 1, 2
- Statice limonium, L. 1

## PRIMULACEÆ

- Primula vulgaris, Huds. 1, 2
- var. \*caulescens.



# A HISTORY OF DURHAM

## PRIMULACEÆ (continued)

- Primula veris*, L. 1, 2
- *farinosa*, L. 1, 2
- Lysimachia vulgaris*, L. 1
- *nemorum*, L. 1, 2, 3
- *Nummularia*, L. 1
- Trientalis europæa*, L. 1, 2
- Glaux maritima*, L. 1
- Anagallis arvensis*, L. Colonist. 1
- var. *cærulea*, Sm. Colonist. 1
- *tenella*, L. 1
- Hottonia palustris*, L. 1
- Samolus valerandi*, L. 1

## OLEACEÆ

- Ligustrum vulgare*, L. 1
- Fraxinus excelsior*, L. 1, 2

## APOCYNACEÆ

- Vinca minor*, L. Alien
- *major*, L. Alien

## GENTIANEÆ

- Erythræa Centaurium*, Pers. 1
- Gentiana campestris*, L. 1, 2
- *Amarella*, L. 1, 2
- *verna*, L. 2
- Menyanthes trifoliata*, L. 1

## BORAGINEÆ

- Echium vulgare*, L. 1
- Symphytum officinale*, L. 1
- Lithospermum officinale*, L. 1
- *arvense*, L. 1
- Myosotis palustris*, With. 1
- sub-sp. *repens*, Don. 1, 2, 3
- *cæspitosa*, Schultz. 1
- *sylvatica*, Ehrh. 1, 2
- *arvensis*, Hoffm. 1, 2
- *collina*, Hoffm. 1
- *versicolor*, Reichb. 1, 2
- Cynoglossum officinale*, L. 1

## CONVOLVULACEÆ

- Convolvulus arvensis*, L. 1
- *sepium*, L. 1
- *Soldanella*, L. 1
- Cuscuta Epithymum*, Murr., var. *trifolii*, Bab. Colonist

## SOLANACEÆ

- Hyoscyamus niger*, L. 1
- Solanum Dulcamara*, L. 1
- *nigrum*, L. Colonist. 1
- Atropa Belladonna*, L. 1
- Lycium barbarum*, L. Colonist. 1, 2

## PLANTAGINEÆ

- Plantago major*, L. 1, 2, 3
- *media*, L. 1, 2
- *lanceolata*, L. 1, 2, 3
- *maritima*, L. 1, 2
- *Coronopus*, L. 1

## SCROPHULARINEÆ

- Verbascum Thapsus*, L. 1

## SCROPHULARINEÆ (continued)

- Linaria cymbalaria*, Mill. Alien
- *vulgaris*, Mill. 1
- *minor*, Desf. 1
- Antirrhinum majus*, L. Alien
- Scrophularia nodosa*, L. 1, 2
- *aquatica*, L. 1
- Mimulus luteus*, L. Alien
- Limosella aquatica*, L. 1
- Digitalis purpurea*, L. 1, 2
- Veronica agrestis*, L. Colonist. 1, 2
- sub-sp. *polita*, Fries. Colonist. 1
- *Buxbaumii*, Ten. Colonist. 1
- *hederifolia*, L. 1
- *arvensis*, L. 1, 2
- *serpyllifolia*, L. 1, 2, 3
- *officinalis*, L. 1, 2
- *Chamædrys*, L. 1, 2, 3
- *Montana*, L. 1
- *scutellata*, L. 1, 2
- *Beccabunga*, L. 1, 2, 3
- *Anagallis*, L. 1
- Bartsia alpina*, L. 2
- *odontites*, Huds. 1, 2
- Euphrasia officinalis*, L. 1, 2, 3
- Rhinanthus Crista-galli*, L. 1, 2, 3
- sub-sp. *major*, Ehrh. 1
- Pedicularis palustris*, L. 1, 2
- *sylvatica*, L. 1, 2
- Melampyrum pratense*, L. 1, 2
- *sylvaticum*, L. 1
- Lathræa squamaria*, L. 1

## OROBANCHEÆ

- Orobanche major*, L. 1
- *elatior*, Sutt. 1

## LENTIBULARINEÆ

- Pinguicula vulgaris*, L. 1, 2, 3
- Utricularia vulgaris*, L. 1

## VERBENACEÆ

- Verbena officinalis*, L. 1

## LABIATÆ

- Mentha rotundifolia*, L. 1
- *viridis*, L. 1
- *piperita*, L. 1
- *sativa*, L.
- sub-sp. *gentilis*, L.
- „ *rubra*, Sm.
- „ *gracilis*, Sm., var. *cardiaca*, Baker
- *aquatica*, L. 1
- *arvensis*, L. 1
- *pulegium*, L. 1
- Origanum vulgare*, L. 1, 2
- Thymus Serpyllum*, L. 1, 2, 3
- Calamintha nepeta*, Clairv. 1
- *clinopodium*, Benth. 1, 2
- *Acinos*, Clairv. 1
- Nepeta Cataria*, L. 1
- Brunella vulgaris*, L. 1, 2, 3

# BOTANY

## LABIATÆ (continued)

- Scutellaria galericulata, L. 1
- minor, L. 1
- Marrubium vulgare, L. 1
- Stachys sylvatica, L. 1, 2
- ambigua, Sm. 1, 2
- palustris, L. 1, 2
- arvensis, L. Colonist. 1
- Betonica, Benth. 1, 2
- Galeopsis, Ladanum, L. 1
- dubia, Leers. 1
- Tetrahit, L. Colonist
- sub-sp. speciosa, Miller. 1
- Lamium purpureum, L. 1, 2, 3
- sub-sp. hybridum, Vill.
- amplexicaule, L. 1
- album, L. 1
- Ballota nigra, L. 1
- var. ruderalis, Fries.
- Teucrium Scorodonia, L. 1, 2
- Ajuga reptans, L. 1, 2

## ILLECEBRACEÆ

- Scleranthus annuus, L. 1

## CHENOPODIACEÆ

- Chenopodium Vulvaria, L. 1
- album, L. 1
- urbicum, L. Colonist
- murale, L. Colonist
- rubrum, L. 1
- glaucum, L. 1
- Bonus-Henricus, L. 1, 2
- Beta maritima, L. 1
- Atriplex patula, L. 1
- var. angustifolia, Sm.
- sub-sp. Hastata, L. 1
- „ Babingtonii, Woods. 1
- littoralis, L. 1
- laciniata, Woods. 1
- portulacoides, L. 1
- Salicornia herbacea, L. 1
- Salsola Kali, L. 1
- Sueda maritima, Dumort. 1

## POLYGONACEÆ

- Polygonum Bistorta, L. 1, 2
- viviparum, L. 1, 2
- amphibium, L. 1
- lapathifolium, L. 1
- Persicaria, L. 1, 2
- Hydropiper, L. 1
- minus, Huds. 1
- aviculare, L. 1, 2
- Raii, Bab. 1
- Convolvulus, L. Colonist. 1
- Rumex obtusifolius, L. 1, 2
- acutus, L. 1, 2
- maritimus, L. 1
- crispus, L. 1, 2, 3
- sanguineus, L. 1
- conglomeratus, Murr. 1

## POLYGONACEÆ (continued)

- Rumex Hydrolapathum, Huds. 1
- aquaticus, L. 1, 2
- Acetosa, L. 1, 2, 3
- Acetosella, L. 1, 2

## THYMELÆACEÆ

- Daphne Laureola, L. 1
- Mezereum, L.

## EUPHORBIACEÆ

- Euphorbia Helioscopia, L. 1
- Peplus, L. Colonist. 1
- exigua, L. Colonist. 1
- Lathyris, L. 1
- Mercurialis perennis, L. 1, 2
- annua, L. 1

## URTICACEÆ

- Ulmus montana, Sm. 1, 2
- suberosa, Ehrh. 1
- Urtica urens, L. 1, 2
- dioica, L. 1, 2, 3
- Parietaria officinalis, L. 1
- Humulus Lupulus, L. 1

## CUPULIFERÆ

- Betula alba, L. 1, 2
- sub-sp. glutinosa, Fries.
- Alnus glutinosa, Gærtn. 1, 2
- Quercus Robur, L. 1, 2
- var. sessiliflora, Salisb.
- „ intermedia, D. Don.
- Fagus sylvatica, L. 1, 2
- Corylus Avellana, L. 1, 2
- Carpinus Betulus, L. Colonist

## SALICINEÆ

- Populus alba, L. 1
- sub-sp. canescens, Sm. 1
- tremula, L. 1, 2
- Salix triandra, L. 1
- pentandra, L. 1, 2
- fragilis, L. 1, 2
- alba, L. 1
- var. cærulea, Sm.
- „ vitellina, L.
- Caprea, L. 1, 2
- aurita, L. 1, 2
- sub-sp. cinerea, L. 1, 2
- repens, L. 1, 2
- nigricans, Fries. 1, 2
- var. rupestris, Sm.
- „ Andersoniana, Sm.
- „ hirta, Sm.
- phyllicifolia, L. 1, 2
- laurina, Sm. 1, 2
- viminalis, L. 1, 2
- Smithiana, Willd. 1, 2
- purpurea, L. 1, 2
- var. Helix, L.
- rubra, Huds. 1

# A HISTORY OF DURHAM

## CERATOPHYLLÆ

*Ceratophyllum demersum*, L. 1

## GYMNOSPERMÆ

### CONIFERÆ

*Pinus sylvestris*, L. 1, 2  
*Juniperus communis*, L. 1, 2  
*Taxus baccata*, L. 1

## MONOCOTYLEDONES

### HYDROCHARIDÆ

*Hydrocharis Morsus-Ranæ*, L. 1  
*Elodea canadensis*, Michx. 1

### ORCHIDÆ

*Malaxis paludosa*, Sw. 1, 2  
*Neottia Nidus-avis*, L. 1  
*Listera ovata*, Br. 1, 2, 3  
— *cordata*, Br. 1, 2, 3  
*Epipactis latifolia*, Sw. 1  
— *palustris*, Sw. 1  
*Cephalanthera ensifolia*, Rich. 1  
*Orchis mascula*, L. 1  
— *latifolia*, L. 1, 2  
— *maculata*, L. 1, 2  
— *Morio*, L. 1  
— *ustulata*, L. 1  
— *pyramidalis*, L. 1  
*Ophrys apifera*, Huds. 1  
— *muscifera*, Huds. 1  
*Habenaria conopsea*, Benth. 1, 2  
— *albida*, Br. 1, 2  
— *viridis*, Br. 1, 2  
— *bifolia*, Br. 1  
— sub-sp. *Chlorantha*, Bab. 1, 2  
*Cypripedium Calceolus*, L. 1

### IRIDÆ

*Iris Pseudacorus*, L. 1  
— *foetidissima*, L. 1

### AMARYLLIDÆ

*Narcissus Pseudo-narcissus*, L. 1  
— *biflorus*, Curt. Alien. 1

### DIOSCOREÆ

*Tamus communis*, L. 1

### LILIACÆ

*Ruscus aculeatus*, L. Alien. 1  
*Convallaria majalis*, L. 1, 2  
*Allium vineale*, L. 1  
— *Scorodoprasum*, L. 1  
— *Schnoprasum*, L. 1  
— *oleraceum*, L. 1  
— *ursinum*, L. 1, 2  
*Scilla nutans*, L. 1, 2  
*Ornithogallum nutans*, L. Alien. 1  
*Tulipa sylvestris*, L. Alien. 1  
*Gagea lutea*, Ker. 1  
*Colchicum autumnale*, L. 1  
*Narthecium ossifragum*, L. 1, 2

## LILIACÆ (continued)

*Tofieldia palustris*, Huds. 1  
*Paris quadrifolia*, L. 1, 2

### JUNCÆ

*Juncus effusus*, L. 1, 2, 3  
— var. *conglomeratus*, L. 1, 2  
— *glaucus*, Ehrh. 1, 2  
— *maritimus*, Sm. 1  
— *triglumis*, L. 2  
— *castaneus*, Sm. Alien  
— *squarrosus*, L. 1, 2, 3  
— *compressus*, Jacq. 1  
— *obtusiflorus*, Ehrh. 1  
— *articulatus*, L. 1, 2  
— sub-sp. *supinus*, Moench. 1, 2, 3  
— „ *lamprocarpus* Ehrh. 1, 2, 3  
— *bufonius*, L. 1, 2

### LUZULA

*maxima*, DC. 1, 2, 3  
*vernalis*, DC. 1, 2  
— *campestris*, Willd. 1, 2, 3  
— var. *erecta*, Desv. 2, 3

### TYPHACÆ

*Sparganium ramosum*, Huds. 1  
— *simplex*, Huds. 1  
— *natans*, L. 1  
*Typha latifolia*, L. 1  
— *angustifolia*, L. 1

### AROIDEÆ

*Arum maculatum*, L. 1

### LEMNACÆ

*Lemna minor*, L. 1  
— *trisulca*, L. 1

### ALISMACEÆ

*Alisma Plantago*, L. 1  
— *ranunculoides*, L. 1  
*Sagittaria sagittifolia*, L. 1  
*Butomus umbellatus*, L. 1

### NAIADACEÆ

*Triglochin palustre*, L. 1, 2, 3  
— *maritimum*, L. 1  
*Potamogeton natans*, L. 1  
— *polygonifolius*, Pourr. 1, 2  
— *plantagineus*, Du Croz. 1  
— *rufescens*, Schrad. 1, 2  
— *heterophyllus*, Schreb. 1  
— *lucens*, L. 1  
— *perfoliatus*, L. 1  
— *crispus*, L. 1  
— *densus*, L. 1  
— *zosterifolius*, Schum. 1  
— *pusillus*, L. 1  
— *pectinatus*, L. 1  
*Ruppia maritima*, L. 1  
*Zannichellia palustris*, L. 1  
*Zostera marina*, L. 1  
— *nana*, Roth. 1



# BOTANY

## CYPERACEÆ

- Eleocharis palustris*, Br. 1
  - sub. sp. *uniglumis*, Link. 1
- *multicaulis*, Sm. 1
- *acicularis*, Sm. 1
- Scirpus lacustris*, L. 1
  - sub-sp. *tabernaemontani*, Gmel. 1
- *maritimus*, L. 1
- *sylvaticus*, L. 1
- *setaceus*, L. 1
- *fluitans*, L. 1
- *cæspitosus*, L. 1
- *pauciflorus*, Lightf. 1
- *Caricis*, Retz. 1, 2
- *rufus*, Wahlb. 1
- Eriophorum vaginatum*, L. 1, 2, 3
- *polystachion*, L. 1, 2, 3
  - sub-sp. *latifolium*, Hoppe. 1, 2
- Rhynchospora alba*, Vahl. 1
- Schœnus nigricans*, L. 1
- Cladium Mariscus*, L. 1
- Kobresia caricina*, Willd. 2
- Carex pulicaris*, L. 1, 2
  - *dioica*, L. 1, 2
  - *disticha*, Huds. 1
  - *arenaria*, L. 1
  - *paniculata*, L. 1
  - *muricata*, L. 1
  - *vilpina*, L. 1
  - *echinata*, Murr. 1, 2, 3
  - *remota*, L. 1
  - *leporina*, L. 1, 2
  - *canescens*, L. 1, 2
  - *rigida*, Good. 2, 3
  - *acuta*, L. 1
  - *stricta*, Good. 1
  - *Goodenovii*, J. Gay. 1, 2, 3
  - *glauca*, Murr. 1, 2, 3
  - *pallescens*, L. 1, 2
  - *panicea*, L. 1, 2, 3
  - *capillaris*, L. 2
  - *pendula*, Huds. 1
  - *præcox*, Jacq. 2
  - *pilulifera*, L. 1, 2
  - *hirta*, L. 1, 2
  - *extensa*, Good. 1
  - *flava*, L. 1, 2
  - *distans*, L. 1
    - sub-sp. *fulva*, Good. 1, 2
  - *binervis*, Sm. 1, 2
  - *sylvatica*, Huds. 1
  - *vesicaria*, L. 1
  - *ampullacea*, Good. 1, 2
  - *riparia*, Curt. 1
  - *paludosa*, Good. 1, 2

## GRAMINEÆ

- Phalaris canariensis*, L. Alien. 1
- *arundinacea*, L. 1, 2

## GRAMINEÆ (continued)

- Anthoxanthum odoratum*, L. 1, 2, 3
- Alopecurus agrestis*, L. Colonist
  - *pratensis*, L. 1, 2, 3
  - *geniculatus*, L. 1, 2, 3
- Millium effusum*, L. 1
- Phleum pratense*, L. 1, 2
  - *arenarium*, L. 1
- Agrostis canina*, L. 1, 2
  - *vulgaris*, With. 1, 2, 3
  - *alba*, L. 1
- Calamagrostis epigeios*, Roth. 1
- Apera Spica-venti*, Beauv. Colonist
- Ammophila arundinacea*, Host. 1
- Aira caryophyllæa*, L. 1
  - *præcox*, L. 1, 2
- Deschampsia flexuosa*, Trin. 1, 2, 3
  - *cæspitosa*, Beauv. 1, 2, 3
- Holcus lanatus*, L. 1, 2
  - *mollis*, L. 1, 2
- Trisetum flavescens*, Beauv. 1, 2
- Avena fatua*, L. Colonist. 1
  - *strigosa*, Schreb. Colonist. 1, 2
  - *pratensis*, L. 1, 2
  - *pubescens*, Huds. 1, 2, 3
- Arrhenatherum avenaceum*, Beauv.
  - var. *bulbosum*, Lindl.
- Triodia decumbens*, Beauv. 1, 2.
- Phragmites communis*, Trin. 1
- Sesleria cærulea*, Scop. 1, 2
- Cynosurus cristatus*, L. 1, 2, 3
- Koeleria cristata*, Pers. 1, 2
- Molinia cærulea*, Mœnch. 1, 2
- Catabrosa aquatica*, Beauv. 1
- Melica nutans*, L. 1, 2
  - *uniflora*, Retz. 1, 2
- Dactylis glomerata*, L. 1, 2
- Briza media*, L. 1, 2
- Poa annua*, L. 1, 2, 3
  - *pratensis*, L. 1, 2, 3
  - *compressa*, L. 1
  - *trivialis*, L. 1, 2, 3
  - *memoralis*, L. 1, 2
    - var. *Parnellii*, Bab.
- Glyceria aquatica*, Sm. 1
  - *fluitans*, Br. 1, 2
    - var. *plicata*, Fr. 1
  - *maritima*, Wahlb. 1
  - *distans*, Wahlb. 1
  - *procumbens*, Dumort. 1
- Festuca elatior*, L. 1, 2
  - *pratensis*, Huds. 1, 2
  - *gigantea*, Vill. 1
  - *sylvatica*, Vill. 1
  - *ovina*, L. 1, 2, 3
    - sub-sp. *duriuscula*, L. 1, 2, 3
    - sub. sp. *rubra*, L. 1
    - var. *\*arenaria*, Osb.
  - *uniglumis*, Sol. 1
  - *rigida*, Kth. 1

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## GRAMINEÆ (*continued*)

- Festuca loliacea*, Huds. 1
- Bromus asper*, Murr. 1, 2
- *erectus*, Huds. 1
- *sterilis*, L. 1
- *mollis*, L. 1, 2
- *secalinus*, L. Colonist
- *commutatus*, Schrab. 1
- Brachypodium sylvaticum*, R. & S. 1, 2
- Lolium perenne*, L. 1, 2
- *temulentum*, L. Colonist
- Agropyrum caninum*, Beauv. 1, 2

## GRAMINEÆ (*continued*)

- Agropyrum repens*, Beauv. 1, 2
- var. *littorale*, Reichb.
- sub-sp. *acutum*, R. & S. 1
- *juncum*, Beauv. 1
- Lepturus filiformis*, Trin. 1
- Nardus stricta*, L. 1, 2, 3
- Hordeum sylvaticum*, Huds. 1
- *pratense*, Huds. 1
- *murinum*, L. 1
- *maritimum*, With. 1
- Elymus arenarius*, L. 1

## CRYPTOGAMS

### FERNS AND FERN ALLIES

The family of the Vascular Cryptogams is well represented in this county ; eighteen out of the twenty-five genera are known, and these comprise rather more than half the British species. The shady denes, together with the great extent of limestone scars and grits, furnish suitable conditions under which flourish many species of ferns. Of the ferns proper several are worthy of special notice. The royal fern (*Osmunda regalis*) at one time grew luxuriantly on the banks of the Derwent and in other parts of the county, but it has been sadly uprooted by enterprising gardeners and tourists, and has now nearly disappeared. *Woodsia ilvensis*, a peculiarly rare plant recorded from Falcon Clints, it is feared is now almost extinct. Except in Westmorland it has no other locality in England. The rare parsley fern (*Cryptogramme crispa*) has a wide range, growing in profusion on the basaltic crags near Holwick below High Force, and very generally on rocks of the millstone grit, ascending to 2,000 feet on Stangend Rig. Near Stanhope and also in the Derwent valley it may still be found. The oak fern (*Polypodium Dryopteris*) and the beech fern (*P. Phlegopteris*) grow sparingly in Castle Eden Dene, and ascend to 1,500 feet in the Vale of Derwent. Here these delicately beautiful forms flourish most luxuriantly, and in favourite haunts clothe the damp banks with a dense dwarf forest of tender green. Three species of the buckler fern (*Nephrodium*)—*N. Oreopteris*, the male fern (*N. Filix-mas*), and *N. dilatatum*—are commonly met with ; while the fourth, *N. spinulosum*, is only recorded from Walridge Fell. The mountain buckler-fern (*N. Oreopteris*) is very plentiful in all the hilly districts, growing most luxuriantly in the higher ranges of the Derwent valley, where *N. dilatatum* is also found in beautiful profusion in the Muggleswick Woods. The rare hay-scented buckler-fern (*N. æmulum*) is found sparingly in the upper part of the Derwent district (Featherstonhaugh). The rare crested buckler-fern (*N. cristatum*) occurs very locally at Edmondbyers (Featherstonhaugh). The lady fern (*Athyrium Filix-femina*), with its two varieties *rheticum* and *molle*, is common among the woods and rocks. The limestone species of *Asplenium*, the wall rue (*A. Ruta-muraria*), the black spleenwort (*A. Adiantum-nigrum*), and the maidenhair spleenwort (*A. Trichomanes*) are frequent on the scars. The green spleenwort

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(*A. viride*) is found on Falcon Clints and abundantly in Harthope and Ireshope in Weardale. The sea spleenwort (*A. marinum*), once plentiful on the magnesian limestone cliffs, is now only to be found in the most inaccessible places. The brittle-bladder fern (*Cystopteris fragilis*) grows at Castle Eden Dene, and flourishes wherever sufficient moisture can be obtained on the limestone rocks in the upper valleys of the county. The hard fern (*Lomaria Spicant*) is very widely distributed, and especially abundant on the hills and edges of the moors, ascending to the highest points. The moonwort (*Botrychium Lunaria*) cannot be said to be rare in Durham. The writer has found it at an altitude of 1,700 feet on the flanks of Kilhope Law, and it may frequently be noted in Burnhope, Rookhope, and Langdon Dale. The adder's-tongue (*Ophioglossum vulgatum*) is also widely distributed, ascending to 1,300 feet, where the writer found well-grown specimens near the black shales in Burnhope.

Among the *Equisetaceæ* (horse-tails) eight species are recorded. The beautiful *Equisetum maximum* is not uncommon in the woods on the river banks, descending to the cliffs of magnesian limestone near Black-hall Rocks, and in Castle Eden Dene it forms a veritable forest of green umbrageous growth. *E. arvense*, commonly known as the 'paddock pipe,' is freely dispersed, and gives rise to considerable trouble by reason of its long, creeping rhizomes entering and blocking up the deep field drains. The graceful *E. sylvaticum* ascends to 1,600 feet in Harwood, and is met with in all the damp woods. *E. variegatum*, *E. limosum*, and *E. palustre*, are also widespread, the latter reaching 2,100 feet on Highfield; *E. byemale* occurs more generally on the lower ground in boggy woods.

Of the *Lycopodiaceæ* (club-mosses) the three species of *Lycopodium*—the stag's-horn moss (*L. clavatum*), *L. alpinum*, and *L. Selago*—are found on the highest fells, while the tiny *Selaginella Selaginoides* grows commonly in the upper parts of Weardale and Teesdale, and at one time found a home on Gateshead Fell.

### LIST OF FERNS AND FERN ALLIES

#### ORDER FILICES

##### Tribe II. *Polypodiææ*.

- Pteris aquilina*, L.
- Cryptogramme crispa*, Br.
- Lomaria Spicant*, Desv.
- Asplenium Ruta-muraria*, L.
- *Trichomanes*, L.
- *viride*, Huds.
- *marinum*, L.
- *Adiantum-nigrum*, L.
- Athyrium Filix-fœmina*, Bernh.
- var. *molle*, Roth.
- „ *rhæticum*, Roth.
- Scolopendrium vulgare*, Sm.
- Woodsia ilvensis*, Br.
- Cystopteris fragilis*, Bernh.
- Aspidium Lonchitis*, Sw.
- *aculeatum*, Sw.
- *angulare*, Willd.
- Nephrodium Filix-mas*, Rich.

#### ORDER FILICES (*continued*)

- Nephrodium cristatum*.
- *spinulosum*, Desv.
- *dilatatum*, Desv.
- *æmulum*, Baker.
- *Oreopteris*, Desv.
- Polypodium vulgare*, L.
- *Phegopteris*, L.
- *Dryopteris*, L.
- *calcareum*, Sm.
- Tribe III. *Osmundææ*.
- Osmunda regalis*, L.
- Tribe IV. *Ophioglosseæ*.
- Ophioglossum vulgatum*, L.
- Botrychium Lunaria*, Sw.

#### ORDER EQUISETACEÆ

- Equisetum arvense*, L.
- *maximum*, Lamk.
- *pratense*, Ehrh.



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### ORDER EQUISETACEÆ (continued)

- Equisetum sylvaticum, L.
- palustre, L.
- limosum, L.
- hyemale, L.
- variegatum, Schleich.

### ORDER LYCOPODIACEÆ

- Lycopodium clavatum, L.
- alpinum, L.
- Selago, L.

### ORDER SELAGINELLACEÆ.

- Selaginella Selaginoides, Gray.

## MOSSES (*Musci*)

The county is peculiarly rich in these plants, owing to its abundant moisture and shade, and to its wonderfully varied surface.

Two parts of the county have been particularly well worked for mosses. These are Teesdale and Weardale. There is a good list of workers in the former interesting dale, and some very rare plants have been found.

Other parts of the county have been dealt with only casually, and the mosses found appear in the appended list.

The rarer and more interesting are located as follows:—

*Pylaisia polyantha*, discovered about Darlington as a British plant in 1833 (Backhouse), is not so rare in Durham as elsewhere. It has been found chiefly on old hawthorn at Gainford, Coniscliffe, Mowden Lane, Walworth, and also on stones at Walworth (Barnes).

At Winston Bridge on the Durham side grows the very rare moss *Anomodon longifolius*. Here also are *Barbula sinuosa*, *Pottia Heimii*, *Tortula papillosa*, *Mnium stellare*, *Fissidens crassipes*, *Eurhynchium crassinervium* in fruit, *Eurhynchium tenellum*, and *Plagiothecium depressum*.

At Piercebridge are found *Pottia intermedia* and *Tortula angustata*. The interesting *Orthotrichum pallens* grows near Darlington, and the pretty little *Orthotrichum stramineum* at Gainford and Winch Bridge.

If we now proceed to the Tees mouth we find the flat golden tufts of *Tortula ruraliformis* all along the sand hills among the stunted grass, but in the flat sandy tracts at Snook Point we have a series of maritime mosses of particular interest. They are *Bryum calophyllum*, *Bryum Warneum*, *Bryum lacustre*, and *Swartzia inclinata*, all of which also grow on Coatham Marshes across the river mouth. One plant of this association growing at Coatham, viz., *Bryum Marratii*, has not yet been found in Durham, but is likely to occur. On the banks of the Tees we find an abundance of mosses from Barnard Castle to the High Force, both on the walls and rocks and on the trees by the roadside, the chief ones on the trees being *Orthotrichum Lyellii* and *Orthotrichum affine*. *Bryum uliginosum* grows by the roadside all the way from Barnard Castle to the High Force Inn (Spruce). At Winch Bridge occur *Mnium stellare* and *Orthotrichum stramineum*, and below the bridge *Hypnum Sommerfeltii*. At the High Force among the basaltic rocks are *Orthotrichum rupestre*, *Bartramia Halleriana*, *Ceratodon conicus*, *Hypnum incurvatum*, *Trichostomum tenuirostre*, and *Gynodontium Bruntoni*; and on the river bank close by the two varieties *plumulosum* and *plumosum* of *Hypnum uncinatum*, both in fruit. In the small plantation close by the High Force are *Ulota crispula*, *Antitrichia curtipendula*, *Orthotrichum pulchellum*, and *Ulota Bruchii*, the last being the

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plant recorded (Spruce) as abundant in Upper Teesdale under the name of *Ulotia Drummondii*. There is considerable evidence now that *Ulotia Bruchii* was mistaken for *Ulotia Drummondii*, which was not well understood in former times (Dixon). On a small patch of boggy ground close by this plantation and growing amongst tall grasses and shrubs are some interesting bog mosses (*Sphagna*), the rarest being *Sphagnum Girgensohnii*, vars. *commune* and *hygrophilum* (Horrell).

Proceeding along the road up the river we soon reach the large mountain Widdy Bank Fell, which supports a wealth of rare mosses probably unsurpassed anywhere else in England. By a stone on the fell the pretty *Dicranella heteromalla* var. *sericea* fruits freely, although invariably barren elsewhere. On the boggy slope of the fell is an abundance of *Catoscopium nigritum*, associated with what is usually a high alpine moss, var. *compactum* of *Bryum pendulum*. Close by grows the rare and golden-coloured moss *Hypnum lycopodioides*, and the interesting *Cinclidium stygium*. On the top of the fell, growing among bog mosses (*Sphagna*), is the very rare *Campylopus setiformis*; but the rarest moss in the British Isles is found here, the only habitat. This is *Tetraplodon Wormskioldii*, first found in 1870 (Slater), but undetermined until refound in 1901 (Horrell and Jones). This is a moss of the arctic regions, but the Teesdale plant is conspicuous for the large size of its leaves, these being considerably longer and wider than in a specimen collected in Lapland (Schimper). Widdy Bank Fell is exceedingly rich in forms of bog moss (*Sphagna*), there being nearly twenty-eight species and eighty-one varieties on this fell alone (Horrell). The rarest of these are *Sphagnum Girgensohnii*, *S. Russowii*, *S. Warnstorffii*, *S. quinquefarium*, *S. molle*, *S. teres*, *S. parvifolium*, *S. imbricatum*, and *S. medium*. Of these the usually rare *S. imbricatum*, *S. Russowii* and *S. medium* occur in great abundance and luxuriance (Horrell). In boggy land near the Cauldron Snout are great mounds of *S. imbricatum*, and *S. fuscum*, which have been noticed there for twenty or more years (Horrell).

At the foot of Widdy Bank and on the banks of the Tees are *Hypnum Patientiae*, and *Cynodontium polycarpum* var. *laxirete*, the latter known only elsewhere from Glenlyon, Perthshire.

Proceeding now to the fine vertical cliffs of basalt called Falcon Clints, which form the edge of the Widdy Bank on the left bank of the Tees, we find in the chinks and on the ledges of rock a wonderful association of rare mosses. The genus *Rhabdoweisia* has here all its three species represented, *fugax*, *denticulata*, and *crenulata*. The genus *Weisia* is represented by *tortilis*, *crispata*, and several varieties of *rupestris*, including the new variety *affinis*. The beautiful vivid green *Bryum Mildeanum* is here, as also *Dicranum falcatum*, *Pterogonium gracile*, *Cylindrothecium concinnum*, *Trichostomum nitidum*, *Diphyscium foliosum* var. *acutifolium*, *Hedwigia ciliata*, *Andreaea petrophila* var. *acuminata*, and *Funaria Templetoni*. On limestone rocks above the clints is *Hylocomium rugosum*, and at the foot of the clints *Archidium alternifolium*. Curving round these clints up the river we reach the Cauldron Snout, where the hitherto still, deep waters



## A HISTORY OF DURHAM

of the Tees plunge over an immense cliff of basalt. This is the home of *Zygodon lapponicus* in the fissures of the rocks, of the very rare and delicate *Bryum concinnum*, of *Tetraphis Browniana* on the underside of stones, and again of *Catoscopium nigrum*.

Returning from Cauldron Snout over the flat top of Widdy Bank we reach a small pool supporting an exceedingly large form of *Hypnum giganteum* associated with the equally fine *Hypnum revolvens* var. *Cossoni* forma *falcata*.

We now reach Langdon Beck, and among the calcareous drift of this river valley is the very rare and minute moss *Amblystegium Sprucei*. Other rare mosses occur in this valley. On the top of the road into Weardale is a small bog supporting two rare plants, the bog moss *Sphagnum Gravetii*, and the Harpidium, *Hypnum exannulatum* var. *purpurascens*.

Descending the Weardale road we reach Ireshope Burn, containing many mosses, the chief being the minute *Seligeria Doniana*, and *Seligeria pusilla* growing on its limestone clints, and *Hypnum filicinum* var. *gracilescens*, *Weisia rupestris* var. *intermedia*, and *Eurhynchium pumilum* close by. In a pool near this burn float large masses of *Hypnum exannulatum* var. *stenophyllum*.

Our next stream, Burnhope Burn, is of particular interest to the bryologist. At its side in a spring is *Philonotis adpressa* in fruit, the only place in England for this. Deeply imbedded in the gravelly drift of its bank are *Dichodontium pellucidum* vars. *compactum* and *fagimontanum*, and *Weisia viridula* var. *densifolia*. On the large boulders in the upper part of the stream are huge masses of *Hypnum ochraceum*, and on the walls near it is an abundance of *Barbula recurvifolia*. By the side of Kilhope Burn are the rare mosses *Weisia crispata*, *Bryum pallescens*, *Amblystegium Juratzkanum* and *Hypnum fluitans* var. *ovale*. Ascending the Kilhope road to the top of Burnhope Seat, we again meet with *Cylindrothecium concinnum*, and on the top of the Seat is a massive growth of *Hypnum fluitans* var. *falcatum* fruiting by a pool.

Weardale is remarkable for the abundance of fruit on the mosses. *Bryum pallens* and *Philonotis fontana* are crowded with fruit on the gravelly drift by the burns. On the side of Sedling Burn is a huge mass of boulder clay covered with a brown carpet of capsules of a very tall and compact growth of *Philonotis fontana*, associated with a very tall and compact growth of *Dicranella varia*.

### LIST OF MOSSES

*Sphagnum fimbriatum*, Wils.  
 — *Girgensohnii*, Russ.  
     var. *commune*, Russ.  
     " *cristatum*, Russ.  
     " *hygrophilum*, Russ.  
     " *stachyodes*, Russ.  
     " *xerophilum*, Russ.  
 — *Russowii*, Warnst.  
     var. *flavescens*, Russ.  
     " *perciliun*, Russ.  
     " *rhodochroum*, Russ.

*Sphagnum Russowii*, Warnst. (*continued*)  
     var. *virescens*, Russ.  
 — *Warnstorffii*, Russ.  
     var. *purpurascens*, Russ.  
     " *versicolor*, Russ.  
     " *viride*, Russ.  
 — *rubellum*, Wils.  
     var. *flavum*, C. Jens.  
     " *pallescens*, Warnst.  
     " *purpurascens*, Warnst.  
     " *rubrum*, Grav.



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*Sphagnum rubellum*, Wils. (*continued*)  
 var. *versicolor*, Russ.  
 „ *viride*, Warnst.  
 — *fuscum*, Klinggr.  
 var. *fuscescens*, Warnst.  
 „ *pallescent*, Russ.  
 — *acutifolium*, R. & W.  
 var. *chlorinum*, Warnst.  
 „ *flavo-rubellum*, Warnst.  
 „ *fusco-virescent*, Warnst.  
 „ *griseum*, Warnst.  
 „ *obscurum*, Warnst.  
 „ *pallescent*, Warnst.  
 „ *purpurascens*, Warnst.  
 „ *roseum*, Warnst.  
 „ *rubrum*, Warnst.  
 „ *versicolor*, Warnst.  
 „ *viride*, Warnst.  
 — *quinquefarium*, Warnst.  
 var. *fusco-flavum*, Warnst.  
 „ *pallescent*, Warnst.  
 „ *roseum*, Warnst.  
 „ *virescent*, Warnst.  
 — *subnitens*, R. & W.  
 var. *flavescens*, Warnst.  
 „ *flavo-rubellum*, Warnst.  
 „ *obscurum*, Warnst.  
 „ *pallescent*, Warnst.  
 „ *purpurascens*, Schlieph  
 „ *versicolor*, Warnst.  
 „ *violascens*, Warnst.  
 „ *virescent*, Warnst.  
 — *molle*, Sulliv.  
 — *squarrosum*, Pers.  
 var. *spectabile*, Russ.  
 — *teres*, Angstr.  
 var. *imbricatum*, Warnst.  
 „ *squarrosulum*, Warnst.  
 „ *subsquarrosum*, Warnst.  
 — *cuspidatum*, R. & W.  
 var. *falcatum*, Russ.  
 „ *plumosum*, N. & H.  
 „ *submersum*, Schimp.  
 — *recurvum*, R. & W.  
 var. *amblyphyllum*, Warnst.  
 „ *mucronatum*, Warnst.  
 — *parvifolium*, Warnst.  
 — *molluscum*, Bruch  
 — *compactum*, DC.  
 var. *imbricatum*, Warnst.  
 „ *subsquarrosum*, Warnst.  
 — *inundatum*, Warnst.  
 — *Gravetii*, Warnst.  
 — *rufescens*, Warnst.  
 — *imbricatum*, Russ.  
 var. *cristatum*, Warnst.  
 „ *sublæve*, Warnst.  
 — *cymbifolium*, Warnst.  
 var. *fusco-flavescens*, Russ.  
 „ *glaucescens*, Warnst.

*Sphagnum cymbifolium*, Warnst. (*cont.*)  
 var. *pallescent*, Warnst.  
 — *papillosum*, Lindb.  
 var. *normale*, Warnst.  
 „ *sublæve*, Limpr.  
 — *medium*, Limpr.  
 var. *glaucescens*, Russ.  
 „ *obscurum*, Warnst.  
 „ *purpurascens*, Warnst.  
 „ *roseo-pallescent*, Warnst.  
 „ *roseum*, Warnst.  
 „ *versicolor*, Warnst.  
*Andreaea petrophila*, Ehrh.  
 var. *acuminata*, Schimp.  
 — *alpina*, Sm.  
 — *Rothii*, W. & M.  
 var. *falcata*, Ldb.  
 — *crassinervia*, Bruch.  
*Tetraphis pellucida*, Hedw.  
 — *Browniana*, Grev.  
*Catharinea undulata*, W. & M.  
*Polytrichum urnigerum*, L.  
 — *alpinum*, L.  
*Polytrichum piliferum*, Schreb.  
 — *formosum*, Hedw.  
 — *commune*, L.  
*Diphyscium foliosum*, Mohr.  
 var. *acutifolium*, Ldb.  
*Archidium alternifolium*, Schimp.  
*Ditrichum flexicaule*, Hpe.  
 var. *densum*, Braithw.  
*Swartzia montana*, Ldb.  
 — *inclinata*, Ehrh.  
*Seligeria Doniana*, C. M.  
 — *pusilla*, B. & S.  
*Ceratodon purpureus*, Brid.  
 — *conicus*, Ldb.  
*Rhabdoweisia denticulata*, B. & S.  
 — *crenulata*, Jameson.  
 — *fugax*, B. & S.  
*Cynodontium Bruntoni*, B. & S.  
 — *polycarpum* var. *laxirete*, Dixon  
*Dichodontium pellucidum*, Schimp.  
 var.  $\beta$  *fagimontanum*, Schimp.  
 „  $\delta$  *compactum*, Schimp.  
 — *flavescens*, Ldb.  
*Dicranella heteromalla*, Schimp.  
 var.  $\delta$  *sericea*, Schimp.  
 — *secunda*, Ldb.  
 — *rufescens*, Schimp.  
 — *varia*, Schimp.  
 var.  $\gamma$  *tenella*, Schimp.  
 — *Schreberi*, Schimp.  
 — *squarrosa*, Schimp.  
*Blindia acuta*, B. & S.  
*Dicranoweisia cirrata*, Ldb.  
*Campylopus flexuosus*, Brid.  
 var. *paradoxus*, Husn.  
 — *setifolius*, Wils.  
 — *atrovirens*, De Not.

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- Campylopus pyriformis*, Brid.  
*Dicranum falcatum*, Hedw.  
 — *Bonjeani*, De Not.  
 — *scoparium*, Hedw.  
     var.  $\delta$  *spadiceum*, Boul.  
 — *fuscescens*, Turn.  
     var.  $\delta$  *flexicaule*, Wils.  
*Leucobryum glaucum*, Schimp.  
*Fissidens viridulus*, Wahl.  
 — *bryoides*, Hedw.  
     — *crassipes*, Wils.  
 — *osmundoides*, Hedw.  
 — *adiantoides*, Hedw.  
 — *decipiens*, De Not.  
     — *taxifolius*, Hedw.  
*Grimmia apocarpa*, Hedw.  
     var.  $\beta$  *rivularis*, W. & M.  
     ,,  $\gamma$  *gracilis*, W. & M.  
     ,,  $\delta$  *alpicola*, H. & T.  
     ,,  $\epsilon$  *pumila*, Schimp.  
 — *funalis*, Schimp.  
 — *torquata*, Hornsch.  
 — *pulvinata*, Sm.  
 — *orbicularis*, Bruch.  
 — *trichophylla*, Grev.  
 — *Doniana*, Sm.  
     — *patens*, B. & S.  
*Rhacomitrium aciculare*, Brid.  
 — *protensum*, Braun.  
 — *fasciculare*, Brid.  
 — *sudeticum*, B. & S.  
 — *heterostichum*, Brid.  
     var. *gracilescens*, B. & S.  
 — *lanuginosum*, Brid.  
 — *canescens*, Brid.  
     var. *B. ericoides*, B. & S.  
*Hedwigia ciliata*, Ehrh.  
*Pottia truncatula*, Ldb.  
 — *intermedia*, Fühnr.  
 — *Heimii*, Fühnr.  
 — *lanceolata*, C. M.  
*Tortula rigida*, Schrad.  
 — *ambigua*, Augstr.  
 — *aloides*, De Not.  
 — *muralis*, Hedw.  
 — *subulata*, Hedw.  
 — *angustata*, Wils.  
 — *mutica*, Ldb.  
 — *intermedia*, Berk.  
 — *ruralis*, Ehrh.  
 — *ruraliformis*, Dixon  
 — *papillosa*, Wils.  
*Barbula lurida*, Ldb.  
 — *rubella*, Mitt.  
     var. *ruberrima*, Braithw.  
     ,, *dentata*, Braithw.  
 — *tophacea*, Mitt.  
 — *fallax*, Hedw.  
     var. *brevifolia*, Schultz.  
 — *recurvifolia*, Schimp.  
*Barbula spadicea*, Mitt.  
 — *rigidula*, Mitt.  
 — *cylindrica*, Schimp.  
 — *sinuosa*, Braithw.  
 — *revoluta*, Brid.  
 — *convoluta*, Hedw.  
 — *unguiculata*, Hedw.  
*Weisia tortilis*, C. M.  
 — *microstoma*, C. M.  
 — *viridula*, Hedw.  
     var. *densifolia*, B. & S.  
 — *crispata*, C. M.  
 — *tenuis*, C. M.  
 — *rupestris*, C. M.  
     var. *intermedia*, Limpr.  
     ,, *stelligera*, Bry. Eur.  
     ,, *compacta*, Schimp.  
     ,, *rigida*, Schimp.  
     ,, *affinis*, Ingham  
     ,, *humilis*, Ingham  
 — *curvirostris*, C. M.  
     var. *commutata*, Dixon  
*Weisia verticillata*, Brid.  
*Trichostomum tenuirostre*, Ldb.  
     var. *Holtii*, Dixon  
 — *nitidum*, Schimp.  
 — *tortuosum*, Dixon  
     var. *fragilifolium*, Dixon  
*Cinclidotus fontinaloides*, P.B.  
*Encalypta ciliata*, Hoffm.  
 — *streptocarpa*, Hedw.  
*Anoetangium compactum*, Schwg.  
*Zygodon lapponicus*, B. & S.  
 — *Mougeotii*, B. & S.  
 — *viridissimus*, R. Br.  
*Ulota Bruchii*, Hornsch.  
 — *crispa*, Brid.  
     var. *crispula*, Hamm.  
     ,, *intermedia*, Dixon.  
 — *phyllantha*, Brid.  
*Orthotrichum rupestre*, Schleich.  
 — *anomalum*, var. *saxatile*, Milde.  
 — *cupulatum*, Hoffm.  
     var. *nudum*, Braithw.  
 — *Lyellii*, H. & T.  
 — *affine*, Schrad.  
     var. *fastigiatum*, Hüb.  
 — *rivulare*, Turn.  
 — *stramineum*, Hornsch.  
 — *pallens*, Bruch.  
 — *pulchellum*, Sm.  
 — *diaphanum*, Schrad.  
*Splachnum sphaericum*, L.  
*Tetraplodon mnioides*, B. & S.  
 — *Wormskioldii*, Lindb.  
*Funaria ericetorum*, Dixon  
 — *hygrometrica*, Sibth.  
*Amblyodon dealbatus*, P.B.  
*Meesia trichoides*, Spr.

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*Aulacomnium palustre*, Schwgr.  
     var. *imbricatum* B. & S.  
 — *androgynum*, Schwgr.  
*Catoscopium nigratum*, Brid.  
*Bartramia* *Æderi*, Sw.  
 --- *ithyphylla*, Brid.  
     *pomiformis*, Hedw.  
     var. *crispa*, B. & S.  
 — *Halleriana*, Hedw.  
*Philonotis fontana*, Brid.  
     var. *pumila*, Dixon  
 — *adpressa*, Ferg.  
 — *calcareo*, Schimp.  
*Breutelia arcuata*, Schimp.  
*Webera cruda*, Schwgr.  
 --- *nutans*, Hedw.  
     *annotina*, Schwgr.  
 — *carnea*, Schimp.  
 — *albicans*, Schimp.  
*Plagiobryum Zierii*, Ldb.  
*Bryum filiforme*, Dicks.  
 — *concinatum*, Spruce  
 — *pendulum*, Schimp.  
     var. *compactum*, Schimp.  
     - *Warneum*, Bland  
     *calophyllum*, R. Br.  
     - *lacustre*, Brid.  
     *inclinatum*, Bland  
     - *uliginosum*, B. & S.  
     - *pallens*, Sw.  
 — *turbinatum*, Schwgr.  
     *bimum*, Schreb.  
     var. *cuspidatum*, Bry. Eur.  
 --- *pseudo-triquetrum*, Schwgr.  
 — *pallescens*, Schleich.  
     var. *contextum*, Hornsch.  
     - *intermedium*, Brid.  
 --- *caespitium*, L.  
 --- *capillare*, L.  
 --- *alpinum*, Huds.  
 — *Mildeanum*, Jur.  
 — *argenteum*, L.  
*Mnium affine*, Bland  
     var. *elatum*, B. & S.  
 --- *cuspidatum*, Hedw.  
 --- *rostratum*, Schrad.  
     *undulatum*, L.  
     *hornum*, L.  
     - *serratum*, Schrad.  
     - *stellare*, Reich.  
     - *punctatum*, L.  
 --- *subglobosum*, B. & S.  
*Cinclidium stygium*, Sw.  
*Fontinalis antipyretica*, L.  
*Neckera crispa*, Hedw.  
 — *complanata*, Hübn.  
*Homalia trichomanoides*, Brid.  
*Leucodon sciuroides*, Schwgr.  
*Pterogonium gracile*, Sw.  
*Antitrichia curtipendula*, Brid.

*Porotrichum alopecurum*, Mitt.  
*Leskea polycarpa*, Ehrh.  
*Anomodon longifolius*, Hartm.  
 — *viticulosus*, H. & T.  
*Heterocladium heteropterum*, B. & S.  
*Pseudoleskea catenulata*, B. & S.  
*Thuidium tamariscinum*, B. & S.  
*Climacium dendroides*, W. & M.  
*Cylindrothecium concinnum*, Schimp.  
*Pylaisia polyantha*, B. & S.  
*Orthothecium intricatum*, B. & S.  
*Isothecium myurum*, Brid.  
*Pleuropus sericeus*, Dixon  
*Camptothecium lutescens*, Schimp.  
*Brachythecium rutabulum*, B. & S.  
 — *rivulare*, B. & S.  
     var. *latifolium*, Husn.  
*Brachythecium velutinum*, B. & S.  
 — *populeum*, B. & S.  
 — *plumosum*, B. & S.  
 — *purum*, Dixon  
*Hyocomium flagellare*, B. & S.  
*Eurhynchium piliferum*, B. & S.  
 — *crassinervium*, B. & S.  
 — *praelongum*, B. & S.  
 — *Swartzii*, Hobk.  
 — *pumilum*, Schimp.  
 — *tenellum*, Milde.  
 — *myosuroides*, Schimp.  
 — *striatum*, B. & S.  
 — *rusciforme*, Milde.  
     var. *atlanticum*, Brid.  
*Plagiothecium depressum*, Dixon  
 — *pulchellum*, B. & S.  
 — *denticulatum*, B. & S.  
 — *sylvaticum*, B. & S.  
 — *undulatum*, B. & S.  
*Amblystegium Sprucei*, B. & S.  
 — *serpens*, B. & S.  
 — *Juratzkanum*, Schimp.  
 — *irriguum*, B. & S.  
 — *fluviale*, B. & S.  
 — *filicinum*, De Not.  
     var. *elatum*, Schimp.  
     „ *gracilescens*, Schimp.  
*Hypnum riparium*, L.  
     var. *longifolium*, Schimp.  
 — *stellatum*, Schreb.  
     var. *protensum*, B. & S.  
 — *chrysophyllum*, Brid.  
     var. *erectum*, Bagn.  
 — *lycopodioides*, Schwgr.  
     - *fluitans*, L.  
     var. *falcatum*, Schimp.  
     „ *ovale*, Ren.  
 — *exannulatum*, Gumb.  
     var. *purpurascens*, Schimp.  
     „ *pinnatum*, Boul., forma *stenophylloides*, Ren.  
     „ *stenophyllum*, Hobk.



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*Hypnum uncinatum*, Hedw.  
     var. *plumulosum*, Schimp.  
     " *plumosum*, Schimp.  
 — *revolvens*, Sw.  
     var. *Cossoni*, Ren, forma *falcata*, Ren.  
 — *commutatum*, Hedw.  
 — *falcatum*, Brid.  
     var. *gracilescens*, Schimp.  
 — *incurvatum*, Schrad.  
 — *cupressiforme*, L.  
     var. *resupinatum*, Schimp.  
     " *filiforme*, Brid.  
     " *ericetorum*, B. & S.  
     " *tectorum*, Brid.  
*Patentiae*, Ldb.  
 — *molluscum*, Hedw.  
     var. *condensatum*, Schimp.

*Hypnum palustre*, L.  
     var. *subsphaericarpon*, B. & S.  
 — *eugyrium*, Schimp.  
 — *ochraceum*, Turn.  
 — *scorpioides*, L.  
 — *stramineum*, Dicks.  
 — *cordifolium*, Hedw.  
 — *giganteum*, Schimp.  
 — *sarmentosum*, Wahl.  
 — *cuspidatum*, L.  
 — *Schreberi*, Willd.  
*Hylocomium splendens*, B. & S.  
 — *loreum*, B. & S.  
 — *squarrosum*, B. & S.  
 — *triquetrum*, B. & S.  
 — *rugosum*, De Not.

### LIVERWORTS (*Hepaticæ*)

The liverworts (*Hepaticæ*) have received only scant attention compared with the mosses, although there is evidence from the plants that have been found that the county is rich in them. The appended list is very incomplete, but is offered as a nucleus for future workers with these interesting and beautiful plants.

The rare ones are located as follows: *Lejeunea serpyllifolia* var. *cavifolia* occurs on the basaltic rock ledges of Falcon Clints, and *Lejeunea calcarea* forms minute patches on the limestone clints of Ireshope Burn. By the riverside near the High Force grows *Porella rivularis*. Near the basaltic blocks scattered on the slope of Widdy Bank Fell are *Blepharozia ciliaris* and *Lepidozia setacea*.

At the base of the High Force is a very rare hepatic, *Hygrobiella laxifolia*, very scarce in quantity. Of the genus *Scapania* there are two very rare species not recorded from any other part of England. These are *Scapania rosacea*, imbedded in the sandy drift by the river side below the High Force, and *Scapania subalpina* var. *undulifolia*, in the gravelly detritus by the side of the Weardale road leading into Langdon Beck. Another member, *Scapania aequiloba*, grows on the Falcon Clints as well as on the slopes of Widdy Bank Fell, but in the latter case usually mixed with mosses, such as *Trichostomum tortuosum*. The rare *Scapania intermedia* also grows on the slopes of Widdy Bank, associated with the equally rare *Eucalyx obovata*.

By the side of Ireshope Burn we find *Chiloscyphus polyanthos*, associated with *Jungermania riparia*, and on the limestone clints is the minute and delicate *Blepharostoma trichophyllum*. On Widdy Bank is found *Mylia Taylori*, which is also of very fine growth on the top of Burnhope Seat, associated with the moss *Hypnum fluitans* var. *falcatum*. The variety *beterophylla* of *Plagiobhila asplenoides* grows by Burnhope Burn, and the variety *majus*, of yellow colour, by the waterfall at Burtree Ford.

*Plagiobhila spinulosa* grows both at the High Force and at Cauldron

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Snout. The flaccid and dark-coloured *Jungermania cordifolia* may be found by the waterfall at Burtree Ford, on the bank of Ireshope Burn, and at the High Force. *Jungermania Floerkii* grows on the top of Burnhope Seat, on Widdy Bank Fell, and on the top of the Weardale road leading into Langdon Beck. Of this genus *Jungermania barbata* is the characteristic species on the gravelly drift by Burnhope Burn, and *Jungermania bantriensis* occurs in great abundance below Winch Bridge in Teesdale. With *Lepidozia setacea* on Widdy Bank is associated *Jungermania porphyroleuca* in fruit. Of the genus *Eucalyx*, one member, *obovata*, has been noted above, and the other member, *hyalina*, grows on the moorland by the side of Sedling Burn; *Nardia compressa* occurs in wet places by Burnhope Burn, in darkish masses. *Pallavicinia Lyelli* has been recorded from the Durham side of the Tees (Spruce). Mixed with the mosses *Cinclidium stygium* and *Amblyodon dealbatus* on the slope of Widdy Bank grows the var. *angustior* of *Aneura pinguis*. The soft hairy masses of *Metzgeria pubescens* grow on the vertical limestone cliffs of Ireshope Burn and also at Cowshill. On the saccharoidal limestone of Falcon Clints are large green flat patches of *Chomiocarpon quadratus*.

In Weardale a striking feature in the rills and ditches by the roadsides, especially the Kilhope road, is the great abundance of the hepatic *Scapania undulata*, whose masses almost choke up these waterways with their glassy green-looking foliage.

### LIST OF HEPATICÆ

- |  |                                |
|--|--------------------------------|
| Frullania tamarisci (L.)               | Plagiochila asplenioides (L.)  |
| — dilatata (L.)                        | var. heterophylla, Nees        |
| Lejeunea serpyllifolia (Dicks)         | „ Dillenii, Tayl.              |
| var. cavifolia, Lindb.                 | — spinulosa (Dicks)            |
| — calcarea, Lib.                       | Jungermania cordifolia, Hook.  |
| Radula complanata (L.)                 | — riparia, Tayl.               |
| Porella platyphylla (L.)               | — inflata, Huds.               |
| — rivularis, Nees.                     | — Floerkii, Web. & Mohr.       |
| Blepharozia ciliaris (L.)              | — barbata, Schmid              |
| Blepharostoma trichophyllum (Dill.)    | — Lyoni, Tayl.                 |
| Lepidozia setacea (Web.)               | — porphyroleuca, Nees          |
| Kantia trichomanis (L.)                | — bantriensis, Hook.           |
| Cephalozia bicuspidata (L.)            | — crenulata, Sm.               |
| Odontoschisma sphagni (Dicks)          | Eucalyx hyalina, Lyell         |
| Hygrobiella laxifolia (Hook.)          | — obovata (Nees)               |
| Scapania resupinata (Dill., L.)        | Nardia compressa (Hook.)       |
| — subalpina var. undulifolia, Gottsche | — scalaris (Schrad)            |
| — aequiloba (Schwœge)                  | Marsupella emarginata, Ehrh.   |
| — nemorosa (L.)                        | Pallavicinia Lyellii (Hook.)   |
| — intermedia, Husn.                    | Aneura multifida (L.)          |
| — undulata (L.)                        | — pinguis (L.)                 |
| — purpurea (Dill.), Carr.              | var. angustior                 |
| — rosacea (Corda)                      | Metzgeria pubescens (Schrank)  |
| Diplophyllum albicans (L.)             | — furcata (L.)                 |
| Lophocolea bidentata (L.)              | Marchantia polymorpha, L.      |
| Chiloscyphus polyanthos (L.)           | Conocephalus conicus, L.       |
| Mylia Taylora (Hook.)                  | Chomiocarpon quadratus (Scop.) |



# A HISTORY OF DURHAM

## LICHENS (*Lichenes*)

The lichen-flora of a given district under changing conditions furnishes evidence to the observant mind that it does not nourish its life as other plants do. If it did so we should naturally expect that the lichens would hold their own with their fellows, subject, of course, to the ordinary changes which come alike to all vegetable forms. But it is not so. The lichen will disappear from a spot, and more especially the frondose or foliaceous forms, without any observable change in the other vegetation around it, and that from a pollution of the atmosphere which is not sufficient to affect those plants which nourish themselves from the soil or matrix of growth. I had an opportunity of giving an illustrative case of this kind from the county of Durham,<sup>1</sup> where lichens spoken of by Mr. Winch as flourishing in Gibside Woods many years before had utterly perished—killed by the fumes from the Tyneside some miles away.

It is fortunate, therefore, that the lichen-flora of Durham county was fairly well worked before the large development of its present coal and iron industries. Nearly 200 species and varieties of lichens are recorded in Winch's *Flora of Northumberland and Durham* as having been gathered in the county. I also catalogued in 1887, in the *Natural History Society's Transactions, Northumberland and Durham*, Mr. Winch's lichens in the museum, Newcastle-on-Tyne; but this was only a partial list, as a number of his lichens with other of his herbaria are in the possession of the Linnean Society.

As a county, Durham had and still possesses an extensive lichen-growth. The physical features of the country are various and favourable. Its eastern seaboard, of course, is poor in results, but its sub-alpine elevations westward and north-west are good. Limited in its outcrop of rock, the limestone predominates in its highest parts crossed and broken by the basalt. The best lichen districts in the county are the river valleys of the Derwent, the Tees, and the Wear. The last two, with elevations margining the upper reaches of the valleys, and the fells enclosing the river sources, are excellent hunting grounds for the botanist generally as well as the lichenologist; and these districts are the least affected by any deleterious atmospheric elements carried by the wind.

The previous workers in this humble branch of botanical science in Durham were Nathaniel John Winch,<sup>2</sup> Mr. Robertson, and the Rev. John Harriman, of Egglestone, Teesdale. By his careful observations and exertions, Mr. Harriman contributed largely to the knowledge and extension of our northern lichenology. He discovered a number of new species. One of these, *Urceolaria diacapsis*, Ach., he found near Barnard Castle. A micro-diagnosis of this beautiful

<sup>1</sup> *Flora* G. 17, 1879.

<sup>2</sup> He was a native of Newcastle, a zealous student of nature, and a distinguished botanist; well known in the north of England by the *Botanist's Guide to Northumberland and Durham* and his *Flora* of the same counties, published in the *Transactions of the Natural History Society, Newcastle-on-Tyne*, 1832.



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lichen, made in 1887, showed that it was not an *Urceolaria*, but a *Lecidea*. I pointed out to Dr. Nylander, Paris, that it should be named *Lecidea diacapsis*, and this decision he confirmed. At Dr. Nylander's request I searched and re-searched carefully what he termed 'the classic ground' of this lichen, but did not succeed in re-finding it.

Mudd's *Manual of British Lichens* likewise contains notices of lichens from Teesdale, where he personally did some collecting.

The following limited list is a selection from my own personal gatherings of lichens in the county of Durham. Each species or variety is either in my herbarium or has passed through my hands :—

Sirosiphon mineatum, Hass.	Umbilicaria cylindrica, L.
Ephebe pubescens, Fr.	var. tornata, Fr. fil.
Collema pulposum, var. pulposulum, Nyl.	Placodium decipiens, Arn.
— tenax, var. coronatum, Koerb.	sub-sp. P. tegularis, Nyl.
— limosum, Ach.	Lecanora sambuci, Pers.
— polycarpon, Schaer.	— frustulosa, Dicks.
Leptogium biatorinum, Nyl.	— Parisiensis, Nyl.
Sphinctrina turbinata, Pers.	— atrynea, Ach.
Pycnothelia papillaria, Duf.	— galactina, f. dispersa, Pers.
Cladonia pityrea, f. denudata, Johns.	sub-sp. L. dissipata, Nyl.
— Florkeana, f. bacillaris, Ach.	— ochracea, Schaer.
Cladina sylvatica, f. scabrosa, Leight.	— Hageni, Ach.
f. tenuis, Lamy.	— syringea, Ach.
— uncialis, f. adunca, Ach.	— subcarnea, Ach.
Stereocaulon denudatum, Flk.	— intricata, Nyl.
Evernia prunastri, var. stictocera, Ach.	— expallens, Ach.
Cetraria islandica, L.	— ventosa, L.
— aculeata, f. acanthella, Ach.	— chalybæa, Schaer.
Platysma triste, Web.	Pertusaria globulifera, Nyl.
Platysma sæpincola, var. ulophylla, Ach.	Lecidea atrorufa, Dicks.
Peltigera aphthosa, L.	— lucida, Ach.
— rufescens, Hflm.	— parasema, var. rugulosa, Ach.
Solorina saccata, Ach.	— plana, Lahm.
— spongiosa, Nyl.	— aromatica, Sm.
Physcia parietina, f. cinerescens, Leight.	— cæruleonigricans, Lightf.
— tenella, Scop.	— alboatra, Hoffm.
Umbilicaria polyhirza, L.	Endocarpon miniatum, L.

## FRESHWATER ALGÆ

It is much to be regretted that very little attention has been devoted to the study of the freshwater algæ in Durham, as it offers a rich field for investigation to those interested in this branch of botany. The craggy ravines and upland glens of the highlands of Teesdale and Wear-dale, and their rapid streams flowing over rough rocky beds of limestone, sandstone, or basalt, especially, would well repay some exploration. Owing to the variations of altitude and soil there appears to be a great wealth of species and genera. It is only possible, however, to give a very brief survey, chiefly from observations of the writer.

The Blue-green Algæ (*Cyanophyceæ*) are richly represented, the humid atmosphere of the upper dales being especially favourable to such genera as *Nostoc*, *Lyngbya*, and *Gleocapsa*, while the ponds and ditches are

## A HISTORY OF DURHAM

the home of numerous species of *Oscillariæ*. Adhering to the submerged stones, the gelatinous masses of *Nostoc verrucosum* are a noticeable feature in some of the clear streams of the mountain limestone.

Among the Green Algæ (*Chlorophyceæ*) the *Desmids* appear to be specially abundant, finding a most congenial habitat in the peaty pools so frequent among the moors. Here also species of *Spirogyra*, *Zygnema*, and *Mesocarpus* are among the commonest forms to be observed. In damp situations the barks of the trees are green with *Pleurococcus vulgaris*; *Prasiola crispa* is found by the roadsides, and the terrestrial species of *Vaucheria* may be met with almost everywhere. The aquatic genera *Ulothrix*, *Coleochaeta*, *Ædogonium*, *Chætophora*, *Cladophora*, and *Vaucheria* are abundant; *Enteromorpha intestinalis* occurs in ditches at Hartlepool, and *Palmella cruenta* is very common in the Sunderland district (Brady). *Clathrocystis æruginosa* and *Physactis parvula* have been noted from the moat at Raby (Norman) and *Tetraspora lubrica* at Ryhope (Brady). The beautiful *Draparnaldia plumosa* is not uncommon, and grows plentifully on the high ground between Allansford and the Sneepe.

The *Rhodophyceæ*, which make up such a large proportion of the marine algæ, include only a few freshwater forms. In Durham the two species of *Batrachospermum*, *B. atrum* and *moniliforme*, are common in the streams of some of the hills and denes, and are also frequently met with in the lower parts of the county. The green waving tufts of *Lemanea fluviatilis* are found attached to the stones in the quieter parts of the clear mountain streams, and *Chantransia chalybea* clings closely to the smooth surface of the rocks under the swiftly rushing water.

Among the *Characeæ*, the species of *Nitella* and *Chara* are widely distributed. *Chara hispida* grows in great profusion in the Hell Kettles at Croft, and *C. flexilis* and *C. fetida* also occur plentifully in the county.

### MARINE ALGÆ

The bleak rugged coast of Durham, exposed to the full fury of the wind, and swept by the cold waters of the northern sea, is not favourable to a luxuriant growth of seaweeds. There is an absence of rocky pools, and few sheltered bays. The temperature of the water varies considerably between the east and west coasts. On the east coast the sea temperature is much lower than on the other parts of the British Isles. For example, in August it only rises to 15° C., while on the south and west coasts 20° C. is attained. In February a marine isothermal of only 5° C. extends from the Naze to the Frith of Forth, the other parts of the coast being 5° C. warmer. It is not surprising, therefore, that the oceanic vegetation is greatly superior on the western shores, but one would hardly expect to find Durham inferior in number of species to Northumberland, which is further north, and possesses still fewer natural advantages of situation. The Northumberland region, however, presents thirty-three species not found in Durham, while the latter has only

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twenty which it may claim for its own, the remaining species being common to both counties.

The following lists have been compiled from Brady's *Catalogue of Marine Algæ of Northumberland and Durham*; *Transactions of the Tyneside Field Club*, 1858-60, iv. The nomenclature is that of Holmes and Batters.

Out of a total of 535 species—excluding varieties—of marine algæ which are found to grow upon the shores of the British Isles, only 136 are known upon the Durham coast. These are distributed among the different orders as follows:—

	Total for British Isles.	Total for Durham.
Cyanophyceæ . . .	57	5
Chlorophyceæ . . .	98	18
Phæophyceæ . . .	144	43
Rhodophyceæ . . .	236	70

No permanent habitat is known for the following species. They have been found from time to time washed up by the sea on this coast, and are therefore included in the list. It is most probable, however, that they have been merely carried by oceanic currents to our shores.

Codium tomentosum, Stackh.	Sargassum bacciferum, C. Ag.
Halurus equisetifolius, Kütz.	Cystoseira ericoides, C. Ag.
Gymnogongrus norvegicus, J. Ag.	Himanthalia lorea, Lyngb.
Calliblepharis ciliata, Kütz.	Arthrocladus villosa, Duby.
Delesseria Hypoglossum, Lamx.	Dictyopteris polypodioides, Lamx.
Polysiphonia byssoides, Grev.	Dictyota dichotoma, Lamx.

### LIST OF MARINE ALGÆ

#### CYANOPHYCEÆ

##### Oscillariaceæ

- Spirulina tenuissima, Kütz.
- Oscillaria Corallinæ, Gom.

##### Rivulariaceæ

- Calothrix confervicola, C. Ag.
- scopulorum, C. Ag.
- Rivularia atra, Roth.

#### CHLOROPHYCEÆ

##### Ulvacæ

- Monostroma Greivillii, J. Ag.
- Enteromorpha clathrata, J. Ag.
- compressa, Grev.
- Linza, J. Ag.
- intestinalis, Link.
- Ulva latissima, J. Ag.

##### Cladophoraceæ

- Urospora flacca, Holm. & Batt.
- Chaetomorpha crassa, Kütz.
- Rhizoclonium riparium
- tortuosum, Kütz.
- Cladophora utriculosa, Kütz.
- rupestris, Kütz.
- gracilis, Griff.
- flexuosa, Griff.
- fracta, Kütz.
- arcata, Kütz.
- lanosa, Kütz.

#### CHLOROPHYCEÆ (continued)

##### Bryopsidaceæ

- Bryopsis plumosa, C. Ag.

##### Codiaceæ

- Codium tomentosum, Stackh.

#### PHÆOPHYCEÆ

##### Desmarestiaceæ

- Desmarestia viridis, Lamx.
- aculeata, Lamx.
- ligulata, Lamx.

##### Dictyosiphonaceæ

- Dictyosiphon fœniculaceus, Grev.

##### Punctariaceæ

- Punctaria plantaginea, Grev.

##### Asperococcaceæ

- Asperococcus echinatus, Grev.

##### Ectocarpaceæ

- Streblonema velutinum, Thur.
- Ectocarpus longifructus, Harv.
- patens, Holm. & Batt.
- tomentosus, Lyngb.
- Isthmoplea sphærophora, Kjellm.
- Pylaiella litoralis, Kjellm.

##### Arthrocladiaceæ

- Arthrocladia villosa, Duby.

##### Elachistaceæ

- Elachista fucicola, Fries.



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## PHÆOPHYCEÆ (continued)

### *Sphacelariaceæ*

- Sphacelaria radicans*, Harv.
- *cirrrosa*, C. Ag.
- *fusca*, Holm. & Batt.
- Chætopteris plumosa*, Kütz.
- Cladostephus spongiosus*, C. Ag.
- *verticillatus*, C. Ag.
- Halopteris filicina*, Kütz.
- Stypocaulon scoparium*, Kütz.

### *Myrionemaceæ*

- Myrionema strangulans*, Grev.

### *Chordariaceæ*

- Chordaria flagelliformis*, C. Ag.
- Mesogloea vermiculata*, Le Jol.
- Castagnea virescens*, Thur.
- Leathesia difformis*, Aresch.

### *Scytosiphonaceæ*

- Phyllitis Fascia*, Kütz.
- Scytosiphon lomentarius*, J. Ag.

### *Chordaceæ*

- Chorda Filum*, Stackh.

### *Laminariaceæ*

- Laminaria saccharina*, Lamx.
- *Phyllitis*, Le Jol.
- *digitata*, Edm.
- Alaria esculenta*, Grev.

### *Fucaceæ*

- Fucus ceranoides*, Linn.
- *vesiculosus*, Linn.
- *serratus*, Linn.
- Ascophyllum nodosum*, Le Jol.
- Pelvetia canaliculata*, Dene & Thur.
- Himanthalia lorea*, Lyngb.
- Halidrys siliquosa*, Lyngb.
- Cystoseira ericoides*, C. Ag.

### *Tilopteridaceæ*

- Tilopteris Mertensii*, Kütz.

### *Dictyotaceæ*

- Dictyopteris polypodioides*, Lamx

## RHODOPHYCEÆ

### *Porphyraceæ*

- Bangia fusco-purpurea*, Lyngb.
- Porphyra linearis*, Grev.
- *laciniata*, C. Ag.

### *Helminthocladiaceæ*

- Chantransia Daviesii*, Thur.
- *virgatula*, Thur.
- Helminthocladia purpurea*, J. Ag.

### *Gelidiaceæ*

- Gelidium corneum*, Lamx.

### *Gigartinaeæ*

- Chondrus crispus*, Stackh.
- Gigartina mamillosa*, J. Ag.
- Phyllophora Brodiaei*, J. Ag.
- *membranifolia*, J. Ag.
- Gymnogongrus norvegicus*, J. Ag.
- Ahnfeltia plicata*, Fries.

## RHODOPHYCEÆ (continued)

### *Gigartinaeæ* (continued)

- Callophyllis laciniata*, Kütz.

### *Rhodophyllidaceæ*

- Cystoclonium purpurascens*, Kütz.
- Catenella Opuntia*, Grev.
- Rhodophyllis bifida*, Kütz.

### *Sphærococcaceæ*

- Calliblepharis ciliata*, Kütz.

### *Rhodymeniaceæ*

- Rhodymenia palmetta*, Grev.
- Lomentaria articulata*, Lyngb.
- *clavellosa*, Gaill.
- Plocamium coccineum*, Lyngb.

### *Delesseriaceæ*

- Nitophyllum laceratum*, Grev.
- Delesseria alata*, Lamx.
- *angustissima*, Griff.
- *Hypoglossum*, Lamx.
- *ruscifolia*, Lamx.
- *sinuosa*, Lamx.
- *sanguinea*, Lamx.

### *Bonnemaisoniaceæ*

- Bonnemaisonia asparagoides*, C. Ag.

### *Rhodomelaceæ*

- Rhodomela subfusca*, C. Ag.
- *lycopodioides*, C. Ag.
- Odonthalia dentata*, Lyngb.
- Laurencia pinnatifida*, Lamx.
- *cæspitosa*, Lamx.
- Polysiphonia urceolata*, Grev.
- *elongata*, Grev.
- *violacea*, Wyatt.
- *fibrillosa*, Grev.
- *fastigiata*, Grev.
- *atro-rubescens*, Grev.
- *nigrescens*, Grev.
- *parasitica*, Grev.
- *byssoides*, Grev.
- *Brodiaei*, Grev.
- Dasya coccinea*, C. Ag.

### *Ceramiceæ*

- Spermothamnion Turneri*, Aresch.
- Griffithsia corallina*, C. Ag.
- *setacea*, C. Ag.
- Halurus equisetifolius*, Kütz.
- Rhodochorton Rothii*, Näg.
- *floridulum*, Näg.
- *sparsum*, Kjellm.
- Callithamnion polyspermum*, C. Ag.
- *Hookeri*, C. Ag.
- *arbuscula*, Lyngb.
- *tetragonum*, C. Ag.
- Plumaria elegans*, Bonnem.
- Ptilota plumosa*, C. Ag.
- Ceramium Deslongchampsii*, Chauv.
- *diaphanum*, Roth.
- *rubrum*, C. Ag.
- *prolifera*, J. Ag.

## BOTANY

### RHODOPHYCEÆ (continued)

#### Ceramiceæ (continued)

*Ceramium acanthotum*, Carm.

#### Dumontiaceæ

*Dumontia filiformis*, Grev.

*Dilsea edulis*, Stackh.

#### Nemastomaceæ

*Furcellaria fastigiata*, Lamx.

### RHODOPHYCEÆ (continued)

#### Rhizophyllidaceæ

*Polyides rotundus*, Grev.

#### Corallinaceæ

*Melobesia verrucata*, Lamx,

*Lithothamnion polymorphum*, Aresch.

*Corallina officinalis*, Linn.

— *rubens*, Ellis & Sol.

## FUNGI

The investigation of the fungus flora of the county has unfortunately been almost entirely neglected during recent years, and no list is available, except that by Winch, published now nearly one hundred years ago.<sup>1</sup> This list of some 250 species comprises chiefly those fungi recognizable by the naked eye, and, as one would naturally expect at that date, contains very slight reference to microscopic species. The old nomenclature has been brought up to date, and the list given below includes Winch's complete record, with the exception of some species of which the determination remained doubtful, as well as additions from the author's own observations. It probably does not represent one tithe of the fungi to be found in the county, but it sufficiently indicates the rich and varied flora which might be expected. Winch's observations were very local, and largely confined to the woods on the banks of the Derwent and the country around Darlington. The frequency with which Medomsley occurs as a habitat shows that the woods in its vicinity are remarkably prolific in genera and species belonging to this group of plants.

The *Hymenomycetes* are represented by many species growing in great profusion in the damp woody denes. The poisonous but very beautiful fly mushroom (*Amanita muscarius*) may be found in the woods at High Force; and in the pastures in upper Teesdale the brilliant red *Hygrophorus coccineus* forms a conspicuous object in autumn. The destructive parasite *Armillaria mellea* is widely distributed, and is responsible for the downfall of many pines and fine old beeches. It may be recognized in the *Rhizomorpha*-stage by a thick black network under the bark. Three rare species of *Lactarius* (*L. zonarius*, *L. plumbeus*, and *L. acris*) are recorded. *Marasmius oreades* growing symbiotically with the grasses produces the well-known 'fairy rings' in many pastures. Various species of *Clavaria*, among them *C. fastigiata*, *C. coraloides*, and the rarer *C. amethystina*, are found in plenty, their pale coral-like branches peeping forth freely from the moist rich humus beneath the trees. On fallen logs, especially of oak, the timber-destroying fungus *Stereum hirsutum* is everywhere met with. The large bracket-shaped fructifications of the *Polyporaceæ* form striking features projecting from the trunks and branches of trees. Two rare forms of *Polyporus* found are *P. fuscidulus* and *P. Vaillantii*; *P. squamosus*, *P. hispidus*, etc., occur as parasites on various trees, the latter being especially destructive to the

<sup>1</sup> *Botanist's Guide through the Counties of Northumberland and Durham* (1805-7).



## A HISTORY OF DURHAM

ash. The large puff-balls *Lycoperdon giganteum* and *L. cœlatum*, the somewhat rare *Cynophallus caninus*, and the *Geasters*, may be specially mentioned among the *Gasteromycetes*. Five species of *Geaster* have been recorded, none of which are common, and one, *G. mammosum*, is extremely rare.

In the large order *Uredinaceæ* (the rust-fungi) many species are found accompanying their hosts through the various changes of altitude. Thus *Puccinia betonica* preys upon the betony at its highest limit in Burnhope, as well as near the coast, and similarly *Æcidium tussilaginis* is found abundantly wherever the coltsfoot grows. The leaves of the wild grasses and cereals are especially liable to the attacks of rust.

Among the *Ascomycetes* the species of *Tapbrina* cause the well-known 'witches-brooms' on the birch and cherry. The *Erysiphaceæ* are common as mildews upon the grasses and other plants. *Nectria* reveals its presence by its small red pustules on decaying twigs, and as the destructive parasite associated with the canker of the ash, apple, and beech. *Epichloë typhina*, with its bright orange stroma, is frequently to be observed destroying the inflorescences of *Dactylis glomerata* and other grasses. The small perithecia of various species of *Sphæriaceæ* are especially common, being present on nearly every decaying stalk. The black stroma tipped with snowy white of *Xylaria hypoxylon* form conspicuous objects in most woods in winter. *Rhytisma acerinum* betrays itself by the black blotches to be seen on the sycamore leaves which are everywhere attacked by this fungus. The dark-coloured gelatinous cups of *Bulgaria inquinans* cover the bark of fallen oak branches. The larch-canker fungus (*Dasyscypha Willkommii*) is frequent in the larch plantations, and threatens to render the cultivation of this tree impossible for any useful purposes. The curious little black tongues of *Geoglossum glabrum* are fairly common, springing up freely in grassy places. The rare *Peziza onotica* known as the 'orange-ear peziza,' as well as *P. melastoma*, the black and red peziza, another rare species, are found in the county, while the glowing crimson cups of *P. coccinea* are common on decaying twigs. The species of *Morchella* are also prevalent in the woody districts, the edible form, *M. esculenta*, being not unfrequent.

Among the *Mesomycetes* some species of *Ustilago*, the smut of the cereals, cause annually a large loss. Among the *Phycomycetes* may be mentioned *Cystopus candidus*, the 'white rust' of cruciferous plants, growing especially on *Capsella bursa-pastoris*; *Peronospora parasitica*, a parasite often associated with *Cystopus candidus*; and *Phytophthora infestans*, the too well known disease of the potato. The cruciferous crops are often devastated by club-root (anbury) caused by *Plasmodiophora brassicæ*, one of the *Myxomycetes*.

Rare species not already mentioned are: *Agaricus petaloides*, *A. horizontalis*, *A. sparteus*, *A. gossypinus*, *Hygrophorus obrusceus*, *Cantharellus cinereus*, *Merasmius fatidus*, *Lentinus tigrinus*, *Panus conchatus*, *Boletus castaneus*, *Trametes pini*, *Dædalea confragosa*, *Thelephora biennis*, *Tremella frondosa*, and *T. vesicaria*.



# BOTANY

The nomenclature in the following list is that of Cooke's *Handbook of British Fungi*.

## LIST OF FUNGI

### FAMILY I. HYMENOMYCETES.

#### Order I. Agaracini

##### Genus 1. Agaricus, L.

###### Sub-genus I. Amanita, Fr.

- Agaricus mappa, Batsch.
- muscarius, L.
- rubescens, P.

###### Sub-genus II. Lepiota, Fr.

- Agaricus procerus, Scop.
- cepœstipes, Sow.
- granulosa, Batsch.

###### Sub-genus III. Armillaria, Fr.

- Agaricus melleus, Vahl.

###### Sub-genus IV. Tricholoma, Fr.

- Agaricus nictitans, Fr.
- albus, Fr.

###### Sub-genus V. Clitocybe, Fr.

- Agaricus vernicosus, Fr.
- odorus, Bull.
- candicans, Fr.
- dealbatus, P.
- opacus, With.
- maximus, Fr.
- infundibuliformis, Schæff.
- cyathiformis, Fr.
- brumalis, Fr.
- fragrans, Sow.
- laccatus, Scop.

###### Sub-genus VI. Pleurotus, Fr.

- Agaricus ulmarius, Bull.
- ostreatus, Jacqu.
- petaloides, Bull.
- tremulus, Schæff.
- septicus, Fr.
- applicatus, Batsch.

###### Sub-genus VII. Collybia, Fr.

- Agaricus radicans, Relh.
- velutipes, Curt.
- dryophilus, Bull.
- clavus, Bull.
- ocellatus, Fr.

###### Sub-genus VIII. Mycena, Fr.

- Agaricus purus, P.
- dissiliens, Fr.
- filopes, Bull.
- epipterygius, Scop.
- corticola, Schum.
- hiemalis, Osbeck.

###### Sub-genus IX. Omphalia, Fr.

- Agaricus fibula, Bull.

###### Sub-genus XIII. Entoloma, Fr.

- Agaricus sericeus, Bull.

###### Sub-genus XV. Claudopus, Smith

- Agaricus variabilis, P.

###### Sub-genus XVII. Nolanea, Fr.

- Agaricus pascuus, P.

### FAMILY I. HYMENOMYCETES (continued)

#### Order I. Agaracini (continued)

##### Genus 1. Agaricus, L. (continued)

###### Sub-genus XIX. Pholiota, Fr.

- Agaricus præcox, P.
- comosus, Fr.
- squarrosus, Müll.

###### Sub-genus XX. Hebeloma, Fr.

- Agaricus pyriodorus, P.
- rimosus, Bull.
- geophyllus, Sow.

###### Sub-genus XXI. Flamula, Fr.

- Agaricus inopus, Fr.

###### Sub-genus XXII. Crepidotus, Fr.

- Agaricus mollis, Schæff.

###### Sub-genus XXIII. Naucoria, Fr.

- Agaricus horizontalis, Bull.
- melinoides, Fr.
- festiva, Fr.

###### Sub-genus XXIV. Galera, Fr.

- Agaricus tener, Schæff.
- hypnorum, Batsch.

###### Sub-genus XXVI. Psalliota, Fr.

- Agaricus arvensis, Schæff.

###### Sub-genus XXVIII. Stropharia, Fr.

- Agaricus æruginosus, Curt.
- stercorarius, Fr.

###### Sub-genus XXIX. Hypholoma, Fr.

- Agaricus fascicularis, Hud.

###### Sub-genus XXX. Psilocybe, Fr.

- Agaricus semilanceatus, Fr.

###### Sub-genus XXXI. Psathyra, Fr.

- Agaricus gossypinus, Fr.

###### Sub-genus XXXIII. Panæolus, Fr.

- Agaricus separatus, L.
- fimiputris, Bull.
- fimicola, Fr.
- papilionaceus, Bull.

##### Genus 2. Coprinus, Fr.

- Coprinus comatus, Fr.
- atramentarius, Fr.
- micaceus, Fr.
- nycthemerus, Fr.
- radiatus, Fr.
- ephemerus, Fr.

##### Genus 3. Bolbitius, Fr.

- Bolbitius fragilis, Fr.
- titubans, Fr.

##### Genus 4. Cortinarius, Fr.

###### Sub-genus I. Phlegmacium, Fr.

- Cortinarius turbinatus, Fr.

###### Sub-genus III. Inoloma, Fr.

- Cortinarius violaceus, Fr.

###### Sub-genus IV. Dermocybe, Fr.

- Cortinarius sanguineus, Fr.

# A HISTORY OF DURHAM

## FAMILY I. HYMENOMYCETES (*continued*)

### Order I. Agaracini (*continued*)

#### Genus 4. Cortinarius, Fr. (*continued*)

##### Sub-genus V. Telamonia, Fr.

Cortinarius evernius, Fr.

— hinnuleus, Fr.

#### Genus 5. Lepista, Smith

Lepista nuda, Bull.

— cinerascens, Bull.

#### Genus 6. Paxillus, Fr.

Paxillus involutus, Fr.

#### Genus 7. Hygrophorus, Fr.

Hygrophorus eburneus, Fr.

— hypothecus, Fr.

— virgineus, Fr.

— coccineus, Fr.

— puniceus, Fr.

— obrusseus, Fr.

— conicus, Fr.

— psittacinus, Fr.

#### Genus 8. Gomphidius, Fr.

Gomphidius glutinosus, Fr.

#### Genus 9. Lactarius, Fr.

Lactarius torminosus, Fr.

— zonarius, Fr.

— blennius, Fr.

— plumbeus, Fr.

— acris, Fr.

— deliciosus, Fr.

— chrysorrhæus, Fr.

— piperitus, Fr.

— subdulcis, Fr.

— vietus, Fr.

— aurantiacus, Fr.

#### Genus 10. Russula, Fr.

Russula nigricans, Fr.

— rubra, Fr.

#### Genus 11. Cantharellus, Adams

Cantharellus, cibarius, Fr.

— tubæformis, Fr.

— infundibuliformis, Fr.

— cinereus, Fr.

— muscigenus, Fr.

— lobatus, Fr.

#### Genus 13. Marasmius, Fr.

Marasmius peronatus, Fr.

— porreus, Fr.

— oreades, Fr.

— rotula, Fr.

— foetidus, Fr.

— epiphyllus, Fr.

#### Genus 14. Lentinus, Fr.

Lentinus tigrinus, Fr.

— flabelliformis, Fr.

#### Genus 15. Panus, Fr.

Panus conchatus, Fr.

— stypticus, Fr.

#### Genus 17. Schizophyllum, Fr.

Schizophyllum commune, Fr.

## FAMILY I. HYMENOMYCETES (*continued*)

### Order I. Agaracini (*continued*)

#### Genus 18. Lenzites, Fr.

Lenzites betulina, Fr.

— flaccida, Fr.

### Order II. Polyporei

#### Genus 19. Boletus, Fr.

Boletus flavus, With.

— piperitus, Bull.

— chrysenteron, Fr.

— edulis, Bull.

— scaber, Fr.

— cyanescens, Bull.

— castaneus, Bull.

#### Genus 20. Polyporus

Polyporus fuscidulus, Fr.

— perennis, Fr.

— squamosus, Fr.

— elegans, Fr.

— sulfureus, Fr.

— heteroclitus, Fr.

— cæsius, Fr.

— hispidus, Fr.

— cuticularis, Fr.

— betulinus, Fr.

— ignarius, Fr.

— ulmarius, Fr.

— fraxineus, Fr.

— variegatus, Fr.

— annosus, Fr.

— versicolor, Fr.

— abietinus, Fr.

— Vaillantii, Fr.

— hybridus, Fr.

— trabeus, Fr.

#### Genus 21. Trametes, Fr.

Trametes pini, Fr.

— suaveolens, Fr.

— odora, Fr.

#### Genus 22. Dædalea, Fr.

Dædalea quercina, P.

— confragrosa, P.

— unicolor, Fr.

#### Genus 23. Merulius, Fr.

Merulius corium, Fr.

— lacrymans, Fr.

#### Genus 27. Fistulina, Bull.

Fistulina hepatica, Fr.

### Order III. Hydnei

#### Genus 28. Hydnum, L.

Hydnum repandum, L.

— auriscalpium, L.

— squalinum, Fr.

— membranaceum, Bull.

### Order IV. Auricularini

#### Genus 36. Craterellus, Fr.

Craterellus cornucopioides, Fr.

#### Genus 37. Thelephora, Fr.

Thelephora cristata, Fr.

# BOTANY

## FAMILY I. HYMENOMYCETES (*continued*)

### Order IV. *Auricularini* (*continued*)

Genus 37. *Thelephora*, Fr. (*continued*)

*Thelephora anthocephala*, Fr.

— *laciniata*, Fr.

— *biennis*, Fr.

Genus 38. *Stereum*, Fr.

*Stereum purpureum*, Fr.

— *hirsutum*, Fr.

— *spadiceum*, Fr.

— *quercinum*, Potter

Genus 39. *Hymenochæte*, Lev.

*Hymenochæte rubiginosa*, Lev.

Genus 40. *Auricularia*, Fr.

*Auricularia mesenterica*, Bull.

Genus 41. *Corticium*, Fr.

*Corticium cæruleum*, Fr.

— *lacteum*, Fr.

### Order V. *Clavariæ*

Genus 45. *Clavaria*, L.

*Clavaria amethystina*, Bull.

— *fastigiata*, DC.

— *muscoïdes*, L.

— *coralloïdes*, L.

— *rugosa*, Bull.

— *fusciformis*, Sow.

— *fragilis*, Holmsk.

— *pistillaris*, L.

Genus 46. *Calocera*, Fr.

*Calocera cornea*, Fr.

Genus 47. *Typhula*, Fr.

*Typhula erythropus*, Fr.

— *phacorrhiza*, Fr.

— *filiformis*, Fr.

Genus 49. *Tremella*, Fr.

*Tremella frondosa*, Fr.

— *mesenterica*, Retz.

— *vesicaria*, Bull.

Genus *Dacryomyces*, Nees.

*Dacryomyces chrysocomus*, Tul.

## FAMILY II. GASTEROMYCETES

### Order VIII. *Phalloidei*

Genus 66. *Phallus*, Linn.

*Phallus impudicus*, Linn.

*Cynophallus caninus*, Fr.

### Order IX. *Trichogastres*

Genus 67. *Tulostoma*, P.

*Tulostoma mammosum*, Fr.

Genus 68. *Geaster*, Mich.

*Geaster coliformis*, P.

— *Bryantii*, Berk.

— *fornicatus*, Fr.

— *limbatus*, Fr.

— *mammosus*, Chev.

Genus 69. *Bovista*, Dill.

*Bovista nigrescens*, P.

— *plumbea*, P.

Genus 70. *Lycoperdon*, Tourn.

*Lycoperdon giganteum*, Batsch.

## FAMILY II. GASTEROMYCETES (*continued*)

### Order IX. *Trichogastres* (*continued*)

Genus 70. *Lycoperdon*, Tourn. (*cont.*)

*Lycoperdon pusillum*, Fr.

— *gemmatum*, Fr.

— *pyriforme*, Schæff.

Genus 71. *Scleroderma*, P.

*Scleroderma vulgare*, Fr.

— *verrucosum*, Pers.

### Order X. *Myxogastres*

Genus 74. *Lycogala*, Mich.

*Lycogala epidendrum*, Fr.

Genus 75. *Reticularia*, Bull.

*Reticularia umbrina*, Fr.

— *lycoperdon*, Bull.

Genus 76. *Æthidium*, Link.

*Æthidium vaporarium*, Fr.

— *septicum*, Fr.

Genus 79. *Diderma*, P.

*Diderma vernicosum*, P.

Genus 85. *Dichæa*, Fr.

*Dichæa elegans*, Fr.

Genus 86. *Stemonitis*, Gled.

*Stemonitis ferruginea*, Ehrb.

— *typhoides*, DC.

Genus 90. *Arcyria*, Hill.

*Arcyria cinerea*, Schum.

Genus 92. *Trichia*, Hall.

*Trichia fallax*, P.

— *nigripes*, P.

— *turbinata*, With.

— *varia*, P.

Genus 94. *Licea*, Schrad.

*Licea cylindrica*, Fr.

### Order XI. *Nidulariacei*, Tul.

Genus 96. *Cyathus*, Pers.

*Cyathus vernicosus*, DC.

Genus 97. *Crucibulum*, Tul.

*Crucibulum vulgare*, Tul.

Genus 99. *Sphærobolus*, Tode.

*Sphærobolus stellatus*, Tode.

## FAMILY III. CONIOMYCETES

### Order XII. *Sphæronemei*

Genus 104. *Phoma*, Fr.

*Phoma napo-brassicæ*, Rost.

Genus 125. *Ascochyta*, Lib.

*Ascochyta metulisporea*, B. et Br.

Genus 132. *Asteroma*, DC.

*Asteroma rosæ*, DC.

### Order XV. *Pucciniæi*

Genus 167. *Puccinia*, Pers.

*Puccinia graminis*, Pers.

— *betonicæ*, DC.

— *sparsa*, Cooke.

— *anemones*, Pers.

— *epilobii*, DC.

### Order XVI. *Cœomacci*

Genus 171. *Ustilago*, Link.

*Ustilago carbo*, Tul.



# A HISTORY OF DURHAM

## FAMILY III. CONIOMYCETES (*continued*)

### Order XVI. *Cæomacei* (*continued*)

#### Genus 171. *Ustilago*, Link. (*continued*)

*Ustilago hordei*, Kell. et Swing.

— *avenæ*, Jensen

— *antherarum*, Fr.

#### Genus 174. *Urocystis*, Rabh.

*Urocystis agropyri*, Preuss.

— *pompholygodes*, Schlecht.

#### Genus 175. *Uromyces*, Lev.

*Uromyces ficariæ*, Lev.

— *alchemillæ*, Pers.

#### Genus 176. *Coleosporium*, Lev.

*Coleosporium tussilaginis*, Lev.

#### Genus 177. *Melampsora*, Cast.

*Melampsora salicina*, Lev.

#### Genus 178. *Cystopus*, de Bary.

*Cystopus candidus*, Lev.

#### Genus 179. *Uredo*, Lev.

*Uredo potentillarum*, DC.

— *pustulata*, P.

#### Genus 180. *Trichobasis*, Lev.

*Trichobasis suaveolens*, Lev.

### Order XVII. *Æcidiiacei*

#### Genus 184. *Æcidium*, Pers.

*Æcidium tragopogonis*, Pers.

— *leucospermum*, DC.

— *epilobii*, D.C.

— *ranunculacearum*, DC.

### Order XIX. *Stilbacei*

#### Genus 195. *Tubercularia*, Tode.

*Tubercularia persicina*, Ditm.

### Order XXI. *Mucedines*

#### Genus 230. *Peronospora*, de Bary.

*Peronospora* (*Phytophthora*) *infestans*,  
Mont.

— *parasitica*, Pers.

#### Genus 234. *Polyactis*, Link.

*Polyactis cinerea*, Berk.

### Order XXII. *Sepedoniæ*

#### Genus 256. *Sepedonium*, Link.

*Sepedonium chrysospermum*, Link.

#### Genus 257. *Fusisporium*, Link.

*Fusisporium roseolum*, Steph.

### Order XXIV. *Mucorini*

#### Genus 266. *Mucor*, Mich.

*Mucor mucedo*, L.

#### Genus 267. *Pilobolus*, Tode.

*Pilobolus crystallinus* Tode.

— *roridus*, Schum.

## FAMILY VII. ASCOMYCETES

### Order XXIII. *Perisporiacei*

#### Genus 277. *Sphærotheca*, Lev.

*Sphærotheca pannosa*, Lev.

— *castagnei*, Lev.

#### Genus 282. *Erysiphe*, Hedw.

*Erysiphe graminis*, DC.

— *Martii*, Lk.

#### Genus 283. *Chætomium*, Kze.

*Chætomium elatum*, Kze.

## FAMILY VII. ASCOMYCETES (*continued*)

### Order XXVIII. *Elvellacei*

#### Genus 286. *Morchella*, Dill.

*Morchella esculenta*, Pers.

— *semilibera*, DC.

#### Genus 288. *Helvella*, Linn.

*Helvella crispa*, Fr.

— *elastica*, Bull.

#### Genus 291. *Spathularia*, P.

*Spathularia flavida*, Pers.

#### Genus 292. *Leotia*, Hill.

*Leotia lubrica*, Pers.

#### Genus 294. *Geoglossum*, P.

*Geoglossum glabrum*, P.

#### Genus 296. *Peziza*, Linn.

*Peziza macropus*, Pers.

— *cochleata*, Huds.

— *onotica*, P.

— *aurantia*, Fr.

— *humosa*, Fr.

— *granulata*, Bull.

— *coccinea*, Jacq.

— *melastoma*, Sow.

— *hemispherica*, Wigg.

— *scutellata*, L.

— *stercorea*, Pers.

— *virginea*, Batsch.

— *bicolor*, Bull.

— *firma*, Pers.

— *inflexa*, Bolt.

— *cinerea*, Batsch.

— (*Dasyscypha*) *Wilkommii*, Wilk.

#### Genus 297. *Helotium*, Fr.

*Helotium citrinum*, Fr.

— *lenticulare*, Fr.

— *serotinum*, Fr.

#### Genus 304. *Ascobolus*, Tode.

*Ascobolus furfuraceus*, Pers.

#### Genus 305. *Bulgaria*, Fr.

*Bulgaria inquinans*, Fr.

— *sarcoides*, Fr.

#### Genus 307. *Stictis*, Pers.

*Stictis radiata*, Pers.

### Order XXX. *Phacidiiacei*

#### Genus 320. *Phacidium*, Fr.

*Phacidium coronatum*, Fr.

#### Genus 322. *Rhytisma* Fr.

*Rhytisma acerinum*, Fr.

#### Genus 326. *Colpoma*, Wallr.

*Colpoma quercinum*, Wallr.

#### Genus 330. *Stegia*, Fr.

*Stegia ilicis*, Fr.

### Order XXXI. *Sphæriacei*

#### Genus 332. *Torrubia*, Lev.

*Torrubia militaris*, Fr.

#### Genus 334. *Epichloë*, Fr.

*Epichloë typhina*, Berk.

#### Genus 335. *Hypocrea*, Fr.

*Hypocrea rufa*, Fr.

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### FAMILY VII. ASCOMYCETES (*continued*)

#### Order XXXI. Sphæriacei (*continued*)

Genus 338. Nectria, Fr.

Nectria cinnabarina, Fr.

— coccinea, Fr.

— sanguinea, Fr.

Genus 339. Xylaria, Fr.

Xylaria hypoxylon, Grev.

Genus 340. Poronia, Fr.

Poronia punctata, Fr.

Genus 342. Ustulina, Tul.

Ustulina vulgaris, Tul.

Genus 343. Hypoxylon, Fr.

Hypoxylon multifforme, Fr.

— fuscum, Fr.

— concentricum, Grev.

— coccineum, Bull.

### FAMILY VII. ASCOMYCETES (*continued*)

#### Order XXXI. Sphæriacei (*continued*)

Genus 344. Nummularia, Tul.

Nummularia Bulliardii, Tul.

Genus 345. Eutype, Tul.

Eutype Acharii, Tul.

Genus 348. Dothidea, Fr.

Dothidea graminis, Fr.

Genus 349. Diatrype, Fr.

Diatrype disciformis, Fr.

— bullata, Fr.

Genus 351. Valsa, Fr.

Valsa coronata, Fr.

Genus 356. Sphæria, Hall

Sphæria ovina, Pers.

— spermoides, Hoffm.

— acuta, Moug.





# ZOOLOGY

## MARINE ZOOLOGY

The investigations of marine zoologists of world-wide reputation have been carried out on the coasts of Northumberland and Durham. Such men were Joshua Alder and Albany Hancock. Contemporary with these, though younger men, were Richard Howse (better known as a geologist), Henry Brady, who studied the Foraminifera, and George Hodge. All these are deceased, the last dying when he was quite young. Others are still living, Canon A. M. Norman, Professor G. S. Brady, and A. Meek, the last having, during the past three years, worked perseveringly at some groups of the Crustacea and at the Fishes. On the labours of all these and their publications, as well as on some hitherto unrecorded observations, the lists here given of the various classes of the marine fauna are based.

The Durham coast-line is most unfavourable for the life of shore and shallow-water animals, since it is utterly devoid of sheltered bays, and subject to the constant beating of the waves of a sea which is rarely calm. The fauna of the North Sea has a decidedly boreal facies. Large numbers of southern forms which are to be met with at the same latitude on the western side of England being absent, while there is a larger infusion of Scandinavian species.

The chief shore collecting ground of Alder, of Hancock, and of others has been that situated just north of the mouth of the Tyne (Cullercoats, Whitley, etc.) and separated from the coast of Durham by only a few miles. It is probable therefore that all the species which are known from these localities live also on the Durham coast, but direct evidence of that fact being wanting, they are not here included in its fauna; and this applies not only to the animals found living between tide-marks, but also to numerous small shells collected from shell-sand, which shell-sand, however, may have been drifted either from the south or from the north. On the other hand, species which have been recorded as obtained from the fishing-boats at Cullercoats are included, as it is quite as probable that they were brought in from the south as from the north of that harbour; and moreover it may be safely assumed that at a distance from land the same animals, perhaps without exception, would be found for some miles on both sides of the mouth of the Tyne.

# A HISTORY OF DURHAM

## FORAMINIFERA

'A Catalogue of the Recent Foraminifera of Northumberland and Durham,' by H. B. Brady, F.R.S., etc., will be found in *Trans. Nat. Hist. Soc. Northumberland and Durham*, i. (1867), 83-107, pl. xii. The list contains seventy-four forms, of which the following fifty-eight have occurred off the Durham coast :—

<i>Cornuspira foliacea</i> , Phil.	<i>Textularia pygmæa</i> , d'Orb.	<i>Vaginulina legumem</i> , Linn.
<i>Biloculina ringens</i> , Lamk.	— <i>sagittula</i> , DeFrance	— <i>linearis</i> , Mont.
— <i>depressa</i> , d'Orb.	— <i>trochus</i> , d'Orb.	<i>Polymorphina lactea</i> , W. and J.
— <i>elongata</i> , d'Orb.	<i>Bigenneraria digitata</i> , d'Orb.	— <i>compressa</i> , d'Orb.
<i>Spiroloculina limbata</i> , d'Orb.	<i>Verneuilina polystropha</i> , Reuss	— <i>tubulosa</i> , d'Orb.
— <i>planulata</i> , Lamk.	<i>Bulimina pupoides</i> , d'Orb.	<i>Uvigerina angulosa</i> , Will.
— <i>excavata</i> , d'Orb.	— <i>aculeata</i> , d'Orb.	<i>Orbulina universa</i> , d'Orb.
<i>Triloculina trigonula</i> , Lamk.	— <i>marginata</i> , d'Orb.	<i>Globigerina bulloides</i> , d'Orb.
— <i>oblonga</i> , Mont.	<i>Lagana sulcata</i> , W. and J.	<i>Discorbina globularis</i> , d'Orb.
<i>Quinqueloculina seminulum</i> , Linn.	— <i>lævis</i> , Mont.	— <i>rosea</i> , d'Orb.
— <i>bicornis</i> , W. and J.	— <i>striata</i> , Mont.	<i>Planorbulina mediterranea</i> , d'Orb.
— <i>secans</i> , d'Orb.	— <i>semistriata</i> , Will.	<i>Truncatulina lobatula</i> , Walker.
— <i>subrotunda</i> , Mont.	— <i>globosa</i> , Mont.	<i>Rotalia beccarii</i> , Linn.
— <i>fusca</i> , H. B. Bra.	— <i>marginata</i> , Mont.	<i>Polystomella crispa</i> , Linn.
<i>Trochammina inflata</i> , Mont.	— <i>squamosa</i> , Mont.	— <i>striato-punctata</i> , Fich. and Moll.
<i>Reophax scorpiurus</i> , Mont.	— <i>caudata</i> , d'Orb.	<i>Nonionina umbilicata</i> , Mont.
<i>Haplophragmium canariense</i> , d'Orb.	— <i>distorta</i> , Par. and Jones	— <i>depressula</i> , W. and J.
<i>Valvulina fusca</i> , Will.	<i>Nodosaria scalaris</i> , Batsch.	— <i>scapha</i> , Fich. and Moll.
<i>Textularia variabilis</i> , Will.	— <i>pyrula</i> , d'Orb.	
— <i>complexa</i> , H. B. Bra.	— <i>communis</i> , d'Orb.	

## PORIFERA (Sponges)

The following species are recorded in Bowerbank's *Monograph of British Spongiadæ* from off the Durham coast, in vol. iv. 1882 ; but the sponges have not been studied in the North Sea, and very much remains to be done with respect to this class.

<i>Hymeniacidon coccineus</i> , Bow.	<i>Halichondria virgea</i> , Bow. The type of a new species
— <i>virgulatus</i> , Bow. The type of a new species	<i>Isodictya pygmæa</i> , Bow.
<i>Halichondria cylindrica</i> , Bow. The type of a new species	— <i>fucorum</i> , Johns.
— <i>panicea</i> , Pall.	— <i>lurida</i> , Bow.
	<i>Spongionella pulchella</i> , Sow.

## CCELEENTERATA (Jellyfish, Sea Anemones, etc.)

See Alder (J.) 'Catalogue of Zoophytes of Northumberland and Durham' (*Trans. Tyneside Nat. Field Club*, vol. iii. 1857) and 'Supplement to Catalogue of the Zoophytes of Northumberland and Durham' (*Trans. Tyneside Nat. Field Club*, vol. v. 1863). Some additional species will be found in papers by Mr. J. Alder and Canon A. M. Norman in *Nat. Hist. Trans. Northumberland and Durham*, i. (1867), 45-64. The nomenclature has been brought up to the present time.

<i>Clava multicaulis</i> , Forskål	<i>Hydractinia echinata</i> , Fleming	<i>Campanularia hincksii</i> , Ald.
<i>Merona cornucopiæ</i> , Norman	<i>Podocoryne areolata</i> , Ald.	— <i>verticillata</i> , Linn.
<i>Coryne pusilla</i> , Gaertner	<i>Corynopsis Alderi</i> , Hodge	— <i>flexuosa</i> , Hincks
<i>Syncoryne sarsi</i> , Lovén	<i>Corymopha nutans</i> , M. Sars	— <i>neglecta</i> , Ald.
— <i>eximia</i> , Allman	<i>Tubularia indivisa</i> , Linn.	— <i>raridentata</i> , Ald.
<i>Gemmaria implexa</i> , Alder	— <i>larynx</i> , Ell. and Sol.	<i>Campanulina acuminata</i> , Ald.
<i>Dicoryne conferta</i> , Alder	— <i>simplex</i> , Ald.	<i>Cuspidella humilis</i> , Hincks
<i>Balanophyllia ramosa</i> , Van Beneden	— <i>gracilis</i> , Harvey	<i>Salacia abietina</i> , M. Sars
<i>Perigonimus repens</i> , St. Wright	<i>Clytia johnstoni</i> , Ald.	<i>Filicellum serpens</i> , Hass.
— <i>linearis</i> , Alder	<i>Obelia geniculata</i> , Linn.	<i>Halecium halecinum</i> , Linn.
<i>Atractylis arenosa</i> , Alder	— <i>gelatinosa</i> , Pall.	— <i>beanii</i> , Johnston.
<i>Eudendrium ramosum</i> , Linn.	— <i>longissima</i> , Pall.	— <i>labrosum</i> , Ald.
— <i>ramcum</i> , Pall.	— <i>dichotoma</i> , Linn.	— <i>tenellum</i> , Hincks
— <i>capillare</i> , Ald.	<i>Campanularia volubilis</i> , Linn.	— <i>filiforme</i> , Ald. (?)

## MARINE ZOOLOGY

- |   |  |  |
|---|--|--|
| <i>Halecium muricatum</i> , Ell. and Sol. | <i>Thuiaria cupressina</i> , Ell. and Sol. | <i>Aleyonium digitatum</i> , Linn.             |
| <i>Sertularia pumila</i> , Linn.          | — <i>thuia</i> , Linn.                     | <i>Pennatula phosphorea</i> , Linn.            |
| — <i>operculata</i> , Linn.               | — <i>articulata</i> , Pall.                | <i>Virgularia mirabilis</i> , O. F. Müll.      |
| — <i>filicina</i> , Ell. and Sol.         | <i>Aglaophenia pluma</i> , Linn.           | <i>Metridium senile</i> , Linn.                |
| — <i>abietina</i> , Linn.                 | <i>Plumularia pinnata</i> , Lamk.          | <i>Sagartia pura</i> , Ald.                    |
| — <i>polyzonias</i> , Linn.               | — <i>frutescens</i> , Lamk.                | — = <i>pellucida</i> , Ald.                    |
| — <i>gayi</i> , Lamx.                     | — <i>setacea</i> , Ellis                   | — <i>troglodytes</i> , Johnst.                 |
| — <i>tricuspidata</i> , Ald.              | — <i>catherina</i> , Johnst.               | <i>Phellia glausapata</i> , Gosse              |
| — <i>rugosa</i> , Linn.                   | — <i>halecioides</i> , Ald.                | <i>Actinia equina</i> , Linn.                  |
| — <i>tenella</i> , Ald.                   | — <i>echinulata</i> , Lamk.                | <i>Bulocera tuediæ</i> , Johnst.               |
| <i>Dipharis rosacea</i> , Linn.           | <i>Heteropyxis ramosa</i> , Lamx.          | <i>Chondracanthia digitata</i> , O. F. Müll.   |
| — <i>fallax</i> , Johnst.                 | <i>Antennularia antennina</i> , Linn.      | <i>Urticina crassicornis</i> , O. F. Müll.     |
| — <i>pinaster</i> , Ell. and Sol.         | <i>Cyanea capillata</i> , Linn.            | <i>Stomphia churchiæ</i> , Gosse               |
| — <i>tamarisca</i> , Linn.                | — <i>imporcata</i> , Norman                | <i>Epizoanthus incrustatus</i> , Düb. and Kor. |
| <i>Hydrallmannia falcata</i> , Linn.      | <i>Halichystus auricula</i> , Rathke       |  |
| <i>Selaginopsis fusca</i> , Johnst.       | <i>Lucernaria campanulata</i> , Lamx.      |  |
| <i>Thuiaria argentea</i> , Ell. and Sol.  |  |  |

## ECHINODERMATA (Star-fishes, Sea-urchins, etc.)

The following list is based on the catalogue of Mr. G. Hodge;<sup>1</sup> the exact nomenclature in some instances being changed.

- |                                       |   |   |
|---------------------------------------|---|---|
| <i>Antedon rosacea</i> , Linck.       | <i>Luidia sarsi</i> , Düb. and Kor.             | <i>Echinocyamus pusillus</i> , Müll.      |
| <i>Ophiura lacertosa</i> , Penn       | <i>Goniaster phrygianus</i> , Par.              | <i>Spatangus purpureus</i> , Müll.        |
| — <i>albida</i> , Forbes              | <i>Crossaster papposus</i> , Fabr.              | <i>Brissopsis lyrifera</i> , Forbes       |
| — <i>affinis</i> , Lütke.             | <i>Solaster endeca</i> , Linn.                  | <i>Echinocardium cordatum</i> , Penn.     |
| — <i>squamosa</i> , Lütke.            | <i>Cribrella sanguinolenta</i> , Müll.          | — <i>ovatum</i> , Leske.                  |
| <i>Ophiopholis aculeata</i> , Müll.   | <i>Asterias rubens</i> , Linn.                  | <i>Cucumaria elongata</i> , Düb. and Kor. |
| <i>Ophiactis ballii</i> , Thomp.      | — <i>violacea</i> , Müll.                       | — <i>lactea</i> , Forbes and Goods.       |
| <i>Amphiura elegans</i> , Leach       | — <i>hispidia</i> , Penn                        | <i>Phyllophorus drummondii</i> , W. Thom. |
| — <i>filiformis</i> , Müll.           | — <i>mülleri</i> , M. Sars                      | <i>Thyone fusus</i> , Müll.               |
| — <i>chiajei</i> , Forbes             | <i>Echinus esculentus</i> , Linn.               | — <i>raphanus</i> , Düb. and Kor.         |
| <i>Ophiocoma nigra</i> , Abild.       | <i>Parechinus miliaris</i> , Leske              | <i>Psolus phantapus</i> , Linn.           |
| <i>Ophiobrix fragilis</i> , Abild.    | <i>Strongylocentrotus dröbachiensis</i> , Müll. |   |
| <i>Astropecten irregularis</i> , Penn | — var. <i>pictus</i> , Norman                   |   |

## ANNELIDA

Scarcely anything is known of the Annelida of the Durham coast. The few species of the following list have been recorded by Professor McIntosh.<sup>2</sup> The meagreness of this report may perhaps induce some naturalist in the county to take up the study of this much neglected group.

- |  |                                      |   |
|--|--------------------------------------|---|
| <i>Eurylepta vittata</i> , Mont.         | <i>Scyllis armillaris</i> , Müll.    | <i>Capitella capitata</i> , Fabr.       |
| <i>Planaria angulata</i> , Müll.         | <i>Notocirrus scoticus</i> , MacInt. | <i>Ammochares ottonis</i> , Grube       |
| <i>Ommatoplea pulchra</i> , John.        | <i>Nereis pelagica</i> , Linn.       | <i>Amphictene auricula</i> , Müll.      |
| <i>Meckelia annulata</i> , Mont.         | <i>Leodice norvegica</i> , Linn.     | <i>Amphiteis gunneri</i> , Sars         |
| <i>Euprosyne foliosa</i> , Aud. and Edw. | <i>Nothria conchylega</i> , Sars     | <i>Sabellides octorranta</i> , Sars     |
| <i>Aphrodite aculeata</i> , Linn.        | <i>Hyalinæcia tubicola</i> , Müll.   | <i>Amphitrite cirrata</i> , Müll.       |
| <i>Lepidonotus squamatus</i> , Linn.     | <i>Goniada maculata</i> , Cæst.      | <i>Terebella figulus</i> , Dalyell.     |
| <i>Nychia cirrhosa</i> , Pall.           | <i>Glycera goësi</i> , Mgr.          | — <i>littoralis</i> , Dalyell.          |
| <i>Harmothoe imbricata</i> , Linn.       | <i>Scoloplos armiger</i> , Müll.     | <i>Pista cristata</i> , Müll.           |
| <i>Polynoë longisetis</i> , Gr.          | <i>Eumenia jeffreysii</i> , McInt.   | <i>Trichobranchus glacialis</i> , Mgr.  |
| <i>Halosydna gelatinosa</i> , Sars       | <i>Ephesia gracilis</i> , H. Rath.   | <i>Sabella penicillus</i> , Linn.       |
| <i>Sthenelais boa</i> , Johnst.          | <i>Trophonia plumosa</i> , Müll.     | <i>Chone infundibuliformis</i> , Kröyer |
| <i>Pholoe minuta</i> , Fabr.             | — <i>glauca</i> , Mgr.               | <i>Protula protensa</i> , Grube         |
| <i>Notophyllum polynoides</i> , Cæst.    | <i>Cirratulus cirratus</i> , Müll.   | <i>Filigrana implexa</i> , Berk.        |
| <i>Ophiodromus vittatus</i> , Sars.      |                                      |   |

<sup>1</sup> 'Catalogue of the Echinoderms of Northumberland and Durham,' *Trans. Nat. Hist. Soc. Northumb. and Durham*, iv. (1871), 120-149.

<sup>2</sup> McIntosh (W. C.), 'Report on a Collection of Annelids dredged off Northumberland and Durham,' *Trans. Nat. Hist. Soc. Northumb. and Durham*, iv. (1871), 118-120.



# A HISTORY OF DURHAM

## PODOSOMATA (Leach)

(= PYCNOGONOIDEA)

Papers on the Podosomata by Mr. George Hodge will be found in vols. v. and vi. of *Trans. Tyneside Nat. Field Club* and vol. i. of *Nat. Hist. Trans. Northumberland and Durham*.

<i>Pycnogonum littorale</i> , Ström	<i>Ammothea echinata</i> , Hodge	<i>Nymphon gracile</i> , Leach
<i>Phoxocephalum femoratum</i> , Rathke	= <i>Achelua brevipes</i> , Hodge	— <i>mixtum</i> , Kröyer
<i>Anoplocephalus petiolatus</i> , Kröyer	(the young.)	— <i>grossipes</i> , O. Fab.
= <i>Pallene attenuata</i> and	<i>Nymphon brevirostre</i> , Hodge	— ? <i>longitarse</i> , Kröyer
<i>pygmæa</i> , Hodge	— <i>rubrum</i> , Hodge	— <i>giganteum</i> , Johnst.
	— ? <i>brevitarse</i> , Kröyer	<i>Gætonymphon hirtum</i> , O. Fab.

## POLYZOA

The following list is based on personal observations, but chiefly on Mr. Alder's catalogue and its supplement (*Trans. Tyneside Nat. Field Club*, 1857 and 1863). The nomenclature used there has been corrected to that employed in Hinck's *History of the British Polyzoa*, 1880; although that nomenclature is at the present time undergoing much modification.

<i>Ætea anguina</i> , Linn.	<i>Gribilina punctata</i> , Hass.	<i>Stomatopora granulata</i> , H. M.-Edw.
<i>Eucratea chelata</i> , Linn.	<i>Microporella ciliata</i> , Pall.	— <i>major</i> , Johnst.
<i>Gemellaria loricata</i> , Linn.	— <i>malusii</i> , Aud.	— <i>dilatans</i> , Johnst.
<i>Cellularia couchii</i> , Busk	<i>Chorizopora brongniartii</i> , Aud.	— <i>fungia</i> , Couch
<i>Menipea ternata</i> , Ell. and Sol.	<i>Schizoporella linearis</i> , Hass.	<i>Tubulipora flabellaris</i> , Fab.
<i>Scrupocellaria scruposa</i> , Linn.	— <i>auriculata</i> , Hass.	<i>Idmonea serpens</i> , Linn.
— <i>scabra</i> , T. Van Ben.	— <i>hyalina</i> , Linn.	<i>Diastopora patina</i> , Lamk.
— <i>reptans</i> , Linn.	— <i>unicornis</i> , Johnst.	— <i>obelis</i> , Johnst.
<i>Bicellaria ciliata</i> , Linn.	<i>Umbonula verrucosa</i> , Esper	<i>Lichenopora hispida</i> , Flem.
<i>Bugula avicularia</i> , Linn.	<i>Porella concinna</i> , Busk	<i>Alcyonidium gelatinosum</i> , Linn
— <i>turbinata</i> , Ald.	— <i>compressa</i> , Sow.	— <i>hirsutum</i> , Flem.
— <i>flabellata</i> , J. V. Thomp.	<i>Smittina landsborovii</i> , Johnst.	— <i>mamillatum</i> , Ald.
— <i>plumosa</i> , Pall.	— <i>reticulata</i> , J. Macg.	— <i>lineare</i> , Hincks
— <i>purpurotincta</i> , Norman	— <i>trispinosa</i> , Johnst.	— <i>mytili</i> , Daly.
— <i>murrayana</i> , Johnst.	<i>Mucronella peachii</i> , Johnst.	— <i>albidum</i> , Ald.
<i>Cellaria fistulosa</i> , Linn	— <i>ventricosa</i> , Hass.	— <i>polyoum</i> , Hass.
— <i>sinuosa</i> , Hass.	— <i>variolosa</i> , Johnst.	— <i>parasiticum</i> , Flem.
<i>Flustra foliacea</i> , Linn.	— <i>coccinea</i> , Abild.	<i>Flustrella hispida</i> , Fab.
— <i>securifrons</i> , Pall.	— <i>pavonella</i> , Ald.	<i>Vesicularia spinosa</i> , Linn.
— <i>carbacea</i> , Ell. and Sol.	<i>Palmicellaria skenei</i> , Ell. and Sol.	<i>Amathia lendigera</i> , Linn.
<i>Membranipora catenularia</i> , Jameson	<i>Rhyncopora bispinosa</i> , Johnst.	<i>Boverbankia imbricata</i> , Adams.
— <i>pilosa</i> , Linn.	<i>Retepora beaniana</i> , King.	<i>Avenella fusca</i> , Daly.
— <i>membranacea</i> , Linn.	<i>Cellepora pumicosa</i> , Linn.	<i>Buskia nitens</i> , Ald.
— <i>lineata</i> , Linn.	— <i>ramulosa</i> , Linn.	<i>Cylindrocium dilatatum</i> , Hincks
— <i>craticula</i> , Ald.	— <i>dichotoma</i> , Hincks	<i>Triticella pedicillata</i> , Ald.
— <i>spinifera</i> , Johnst.	— <i>avicularis</i> , Hincks	<i>Valkeria uva</i> , Linn.
— <i>unicornis</i> , Fleming	<i>Crisia cornuta</i> , Linn.	<i>Pedicellina cernua</i> , Pall.
— <i>dumerilii</i> , Aud.	— <i>eburnea</i> , Linn.	— <i>belgica</i> , Gosse
— <i>aurita</i> , Hincks	— <i>denticulata</i> , Lamk.	— <i>gracilis</i> , Sars
— <i>flemingii</i> , Busk		

## TUNICATA (Sea-squirts or Ascidians)

On the authority of Alder and Hancock.

<i>Ascidia elliptica</i> , Ald. and Han.	<i>Molgula siphonata</i> , Ald.	<i>Styela vestita</i> , Ald.
— <i>depressa</i> , Ald. and Han.	— <i>atrina</i> , Ald. and Han.	— <i>grossularia</i> , Van Ben.
— <i>zosterophora</i> , Ald.	<i>Eugyra arenosa</i> , Ald. and Han.	<i>Thysanum variolosum</i> , Gaert.
— <i>clavata</i> , Ald. and Han.	<i>Cynthia echinata</i> , Linn.	<i>Phlebobranchia ferrugata</i> , Forbes and
— <i>mentula</i> , Müll.	<i>Styela tectosa</i> , Mayr.	Goods.
— <i>capitata</i> , Ald. and Han.	— <i>coriacea</i> , Ald. and Han.	<i>Paraschisma Flemingii</i> , Ald.
— <i>sericea</i> , Han.	— <i>salata</i> , Ald.	<i>Didemnum gelatinosum</i> , Milne-
<i>Ciona intestinalis</i> , Linn.	— <i>granulata</i> , Ald.	Edw.
<i>Corella parallelogramma</i> , Müll.	— <i>ornata</i> , Ald.	<i>Botryllus schlosseri</i> , Pall.

# MOLLUSCS

## MARINE

In 1848 Mr. J. Alder gave a 'Catalogue of the Mollusca of Northumberland and Durham,' in the *Trans. Tyneside Nat. Field Club*. Subsequently Alder and Hancock published through the Ray Society their magnificent monograph on the *Nudibranchiate Mollusca*, and in that work a large number of species were described or recorded from the north-east coast. Other lists of mollusca were subsequently added by Mr. Alder in vols. v. and vi. of the *Trans. Tyneside Nat. Field Club*, and vol. i. of the *Trans. Nat. Hist. Soc. Northumberland and Durham*. The Editor also possesses a MS. list given to him by Mr. Alder which contains additions to the fauna of the district as well as a list of certain names which were contained in Mr. Alder's original catalogue, and which he considered ought to be struck out. From these various sources the following list of Durham species has been compiled.

The North Sea has long been famous for the very fine and rare species of mollusca which were brought in to the north-east coast by the long-line fishers, and were sold at very high prices, since at that time they were unknown elsewhere; and at the present day, though most of them have been found in some other places, they are still rare, and highly esteemed by conchologists. These shells are *Panopæa norvegica*, *Natica pallida*, *Amauropsis islandica*, *Liomesis dalei*, *Volutopsis norvegicus*, *Beringius turtoni*, and *Buccinofusus berniciensis*; more recently *Calliostoma occidentale* has been added. They are all high-boreal forms which are found on the Norwegian coast. Although most of them are known now also to occur off the Aberdeenshire coast, in the sea around Shetland, and off the north-west of Scotland, nevertheless, the Dogger Bank neighbourhood is still likely to remain the chief locality from which collectors may hope to obtain specimens.

## AMPHINEURA

*Hanleya hanleyi* (Bean)  
*Tonicella marmorea* (Fab.)  
— *rubra* (Lowe)

*Callochiton lævis* (Mont.)  
*Craspedochilus onyx* (Speng)  
— *cinereus* (Linn.)

*Craspedochilus albus* (Linn.)  
*Acanthochites fascicularis* (Linn.)

## PELECYPODA (*Oysters, mussels, &c.*)

*Nucula nitida*, Sow.  
— *nuculus* (Linn.)  
— *tenuis* (Mont.)  
*Nuculana minuta* (Müll.)  
*Anomia patelliformis*, Linn.  
— *ephippium*, Linn.  
*Arca tetragona*, Poli.

*Mytilus edulis*, Linn.  
*Volvella modiolus*, Linn.  
var. *gigas*, Norman  
*Modiolaria marmorata* (Forbes)  
— *discors* (Linn.)  
— *discrepans* (Leach)  
*Ostrea edulis*, Linn.

*Pecten maximus* (Linn.)  
— *pusio* (Linn.)  
— *varius* (Linn.)  
— *opercularis* (Linn.)  
— *tigrinus* (Müll.)  
— *striatus* (Müll.)  
— *similis* (Laskey)

# A HISTORY OF DURHAM

*Lima subauriculata* (Mont.)  
 — *Loscombi*, Sow.  
*Turtonia minuta* (Fab.)  
*Astarte sulcata* (da Costa)  
     var. *scotica* (Mat. and Rac.)  
 — *compressa* (Mont.)  
*Cyprina islandica* (Linn.)  
*Lucina borealis* (Linn.)  
*Thyasira flexuosa* (Mont.)  
*Montacuta substriata* (Mont.)  
 — *bidentata* (Mont.)  
*Tellinomya furruginosa* (Mont.)  
*Kellia suborbicularis* (Mont.)  
*Lasæa rubra* (Mont.)  
*Syndosmya prismatica* (Mont.)  
 — *nitida* (Müll.)  
 — *alba* (Wood)  
 ? — *tenuis* (Mont.)  
*Scrobicularia plana* (da Costa)  
*Tellina crassa* (Gmelin)  
 — *tenuis*, da Costa

*Tellina fabula*, Gron.  
*Donax vittatus* (da Costa)  
*Macra stultorum*, Linn.  
*Spisula solida* (Linn.)  
 — *elliptica* (Brown)  
 — *subtruncata* (da Costa)  
*Lucinopsis undata* (Penn.)  
*Dosinia exoleta* (Linn.)  
 — *lupina* (Linn.)  
*Venus fasciata* (da Costa)  
 — *casina*, Linn.  
 — *ovata*, Penn.  
 — *gallina*, Linn.  
*Tapes virgineus* (Linn.)  
 — *pullastra* (Mont.)  
*Cardium ecbinatum*, Linn.  
 — *fasciatum*, Mont.  
 — *nodosum*, Turton  
 — *edule*, Linn.  
*Lævicardium norvegicum* (Speng.)  
*Psammobia tellinella*, Lamk.

*Psammobia ferroensis* (Chemn.)  
 — *depressa*, Penn.  
*Mya arenaria*, Linn.  
 — *truncata*, Linn.  
*Corbula gibba* (Olivi)  
*Cultellus pellucidus* (Penn.)  
*Ensis ensis* (Linn.)  
 — *siliqua* (Linn.)  
*Panopea norvegica* (Speng.)  
*Saxicava rugosa* (Linn.)  
 — *arctica* (Linn.)  
*Barnea candida* (Linn.)  
*Zirfæa crispata*, Linn.  
*Xylophaga dorsalis* (Turton)  
*Lyonsia norvegica* (Chemn.)  
*Cochliodonta prætenue* (Pult.)  
*Thracia fragilis*, Penn.  
     var. *villosiuscula*, Macg.  
 — *convexa* (W. Wood)  
 — *distorta* (Mont.)  
*Cuspidaria cuspidata* (Olivi)

## SCAPHOPODA.

*Dentalium entalis*, Linn.

## GASTROPODA (*Whelks, winkles, &c.*)

### I. PROSOBRANCHIA

*Patella depressa*, Penn.  
 — *vulgata*, Linn.  
*Helcion pellucidus* (Linn.)  
     var. *levis*, Penn.  
*Acmæa testudinalis* (Müll.)  
 — *virginea* (Müll.)  
*Puncturella noachina* (Linn.)  
*Emarginula fissura* (Linn.)  
*Eumargarita helicina* (Fab.)  
*Gibbula magus* (Linn.)  
 — *tumida* (Mont.)  
 — *cineraria* (Linn.)  
*Calliostoma montagui*, W. Wood.  
 — *miliare* (Broc.)  
 — *zizyphinus* (Linn.)  
 — *occidentale*, Migh.  
*Lacuna divaricata* (Fab.)  
 — *parva* (da Costa)  
 — *pallidula* (da Costa)  
*Littorina neritoides* (Linn.)  
 — *rudis* (Maton)  
 — *obtusata* (Linn.)  
 — *littorea* (Linn.)  
*Rissoa inconspicua*, Alder  
 — *parva* (da Costa)  
*Alvania reticulata* (Mont.)  
 — *punctura* (Mont.)  
*Manzonina costata* (J. Adams)  
*Umbilicaria striata* (J. Adams)  
*Hyalia vitrea* (Mont.)  
*Cingula semistriata* (Mont.)

*Paludestrina stagnalis* (Baster.)  
*Jeffreysia diaphana* (Alder)  
*Skenea planorbis* (Fab.)  
*Capulus hungaricus* (Linn.)  
*Trivia europæa* (Mont.)  
*Natica pallida*, Brod. and Sow.  
 — *catena* (da Costa)  
 — *alderi*, Forbes  
 — *montagui*, Forbes  
*Amauropsis islandicus* (Gmelin)  
*Lamellaria perspicua* (Linn.)  
*Velutina lævigata* (Penn.)  
*Velutella flexilis* (Mont.)  
*Scala turtonis* (Turton)  
 — *trevelyana* (Leach)  
*Odostomia conspicua*, Alder  
 — *unidentata*, Forbes and Hanley  
 — *turrita*, Hanl.  
*Brachystomia ambigua* (Maton and Rack.)  
*Ondina divisa* (J. Adams)  
*Pyrgulina indistincta* (Mont.)  
 — *interstincta* (Mont.)  
*Spiralinella spiralis* (Mont.)  
*Pyrgostelis interrupta* (Totten)  
*Eulimella scillæ* (Scac.)  
 — *commutata*, Monterosato  
*Eulima intermedia*, Cant.  
 — *incurva* (Ren.)  
 — *fragilis*, Forbes  
 — *bilineata* (Alder)

*Stilifer turtoni* (Turt.)  
*Cæcum glabrum* (Mont.)  
*Turritella communis*, Lamk.  
*Trichotropsis borealis*, Brod. and Sow.  
*Aporrhais pes-pelecani* (Linn.)  
*Buccinum undatum*, Linn.  
     var. *littoralis*, King  
     var. *striata*, Penn.  
     var. *pelagica*, King  
     var. *magna*, King  
*Liomesus dalei* (J. Sow.)  
*Neptunea antiqua* (Linn.)  
*Volutopsis norvegicus* (Chem.)  
*Beringius turtoni* (Bean)  
*Tritonofusus gracilis* (da Costa)  
 — *propinquus* (Alder)  
*Buccinofusus berniciensis* (King)  
*Trophon barvicensis*, Johnst.  
 — *truncata*, Ström  
*Purpura lapillus* (Linn.)  
*Nassa incrassata* (Ström)  
*Bela turricula* (Mont.)  
 — *trevelyana* (Turt.)  
 — *rufa* (Mont.)  
*Mangilia costata* (Don.)  
 — *brachystoma* (Phil.)  
*Tectea anceps* (Fichw.)  
*Clathrella leufroyi* (Mich.)  
 — *linearis* (Mont.)



# MOLLUSCS

## II. OPISTHOBRANCHIA

*Acteon tornatilis* (Linn.)  
*Tornatina truncatula* (Brug.)  
 — *umbilicata* (Mont.)  
     var. *strigella*, Lovén  
*Bullinella cylindracea* (Penn.)  
*Roxania utriculus*, Broc.  
*Acera bullata* (Müll.)  
*Philine scabra* (Müll.)  
 — *quadrata* (S. V. Wood)  
 — *punctata* (Clark)  
 — *pruinosa* (Clark)  
*Aphysia punctata*, Cuv.  
*Alderia modesta*, Lovén  
*Limapontia capitata* (Müll.)  
 — *depressa*, Ald. and Hanc.  
*Cenia cocksi* (Ald. and Hanc.)

*Eolis papillosa* (Linn.)  
*Cuthona nana* (Ald. and Hanc.)  
*Cratena olivacea* (Ald. and Hanc.)  
 — *peachii* (Ald. and Hanc.)  
 — *northumbrica* (Ald. and Hanc.)  
*Galvina cingulata*, Ald. and Hanc.  
 — *tricolor* (Forbes)  
 — *exigua* (Ald. and Hanc.)  
*Facelina coronata*, Forbes and  
     Goodsir  
 — *drummondi*, Thomp.  
*Hero formosa* (Lovén)  
*Doto fragilis* (Forbes)  
 — *coronata* (Gmelin)  
*Dendronotus frondosus* (Asc.)

*Pleurophyllidia loveni*, Bergh.  
*Tritonia hombergi*, Cuv.  
 — *alba*, Ald. and Hanc.  
 — *plebeia*, Johnst.  
*Archidoris tuberculata* (Cuv.)  
*Jorunna johnstoni* (Ald. and Hanc.)  
*Acanthodoris pilosa* (Müll.)  
*Lamellidoris bilamellata* (Linn.)  
*Triopa clavigera* (Müll.)  
*Palio lessoni* (d'Orb.)  
*Polycera quadrilineata* (Müll.)  
*Goniodoris nodosa* (Mont.)  
*Idalina elegans* (Leuckart)  
 — *aspera* (Ald. and Hanc.)  
*Alexia myosotis* (Drap.)

## CEPHALOPODA (*Cuttle-fishes*)

*Loligo forbesi*, Steenst.  
 — *media* (Linn.)  
 — *marmorata*, Vérany.

*Sepia officinalis*, Linn.  
 — *ruppellaria*, d'Orb.  
*Sepiola scandica*, Steenst.

*Sepiola atlantica*, d'Orb.  
*Moschites cirrosa* (Lamarck)

# MOLLUSCS

## NON-MARINE

Durham is not a county in which the non-marine mollusca find conditions suitable for their abundant development.

In the large tract of Magnesian Limestone that extends from South Shields to Hartlepool along the coast, and is bounded on its inland extension by an almost straight line from the latter place to Darlington, and by an irregular line from South Shields to Gainford (about seven miles west of Darlington), there are numerous valleys that produce a considerable number of land species. To the west, however, though the land surface is a good deal diversified, it is on the whole too hilly to afford suitable habitat.

The small extent of marshes and ditches and the absence of canals or slow-running rivers account for the fact that the freshwater species are much less abundant here than in the more southern parts of England.

Still, out of 140, or so, species met with in the British Islands, 94 have been recorded for Durham, nor is this number likely to be much increased by further research.

The most interesting form is *Limax tenellus*, Müll., which was first described as British from a specimen procured in a wood at Allansford. It was generally supposed for some time that the individual so identified was merely the young of some other species; quite recently, however, this slug has been re-discovered in several localities in the British Isles.

Certain species that have been chronicled are excluded from the list. *Helix lucida* is an old record for a form of *Vitrea*, usually *V. alliaria*, the true *V. lucida* being until lately unknown to our conchologists. *Unio pictorum* and *Planorbis vortex* were recorded by Hogg (in Brewster's *History of Stockton-on-Tees*, 1827), but these identifications are doubtful. Similar uncertainty attaches to the record of *L. brunneus*, Drap., which was said to be frequent in damp woods. Dead shells of *Vivipara vivipara* and *Neritina fluviatilis* have been met with on the coast, but have evidently been brought in ballast by ships.

*Pomatias elegans* is found in Yorkshire, and has been recorded for Northumberland, so that its absence from Durham is noteworthy. *Helicella cantiana*, although included in our list, is not common, and is by some suspected to be a latter-day introduction, but then it has as yet not been found in the fossil state anywhere in Britain.

With the exception of this last-named species there is an absence of all continental and south-western (or Lusitanian) forms, so that the assemblage is of the normal north-British type.

The literature of the subject is not very extensive, and mostly scattered, the two more important papers being that by J. Alder (the discoverer of several, and author of four British species) in the *Trans-*

## MOLLUSCS

actions of the Tyneside Naturalists Field Club, i. 1848; and one by Mr. W. D. Sutton in the *Quarterly Journal of Conchology*, i. 1874. From these and minor articles, as well as from the Records of the Conchological Society, the following list has been compiled.

For the sake of uniformity in the several County Histories the same nomenclature is here followed as in precursors in the series, but for the most recent information on this subject reference should be made to the List published by the Conchological Society.

### A. GASTROPODA

#### I. PULMONATA

##### a. STYLOMMATOPHORA

- Testacella scutulum*, Sby. Bensham, near Gateshead  
*Limax maximus*, Linn.  
 — *tenellus*, Müll.  
 — *flavus*, Linn.  
 — *arborum*, Bouch.-Chant  
*Agriolimax agrestis* (Linn.)  
 — *levis* (Müll.)  
*Amalia sowerbii* (Fér.)  
 — *gagates* (Drap.) South Shields.  
*Vitrina pellucida* (Müll.)  
*Vitrea crystallina* (Müll.)  
 — *alliaria* (Miller). Whitburn; Cleadon; Gateshead; Durham  
 — *glabra* (Brit. Auct.). East Thickley  
 — *cellaria* (Müll.)  
 — *nitidula* (Drap.)  
 — *pura* (Ald.)  
 — *radiatula* (Ald.)  
 — *excavata* (Bean). Great High Wood; Stella; Gibside; Durham  
 — *nitida* (Müll.). Not common.  
 — *fulva* (Müll.)  
*Arion ater* (Linn.)  
 — *bortensis*, Fér.  
 — *circumscriptus*, John. Middleton-one-Row  
 — *subfuscus* (Drap.). Middleton-one-Row  
*Punctum pygmaeum* (Drap.). Rare and local.  
*Pyramidula rupestris* (Drap.). Local; Marsden, etc.  
 — *rotundata* (Müll.)  
*Helicella virgata* (Da. C.) } Local  
 — *itala* (Linn.) }  
 — *caperata* (Mont.)  
 — *cantiana* (Mont.). Not common; more plentiful near Sunderland  
*Hygromia fusca* (Mont.). High Force, Teesdale; Middleton-one-Row  
 — *granulata* (Ald.). Rare: Tanfield; Dinsdale  
 — *hispida* (Linn.)  
 — *rufescens* (Penn.). Sunderland and other parts of the magnesian limestone district  
*Antistoma radiata* (Müll.). Rare: Ryhope Dean; Castle Eden Dean  
 — *lamellata* (Jeff.). Rare: Gibside Woods; Tanfield Woods; Wallbottle Dean  
*Valonia pulchella* (Müll.)  
*Helicigona arbustorum* (Linn.)  
*Limax aspersa*, Müll.

- Helix memoralis*, Linn.  
 — *bortensis*, Müll.  
*Buliminus obscurus* (Müll.)  
*Cochlicopa lubrica* (Müll.)  
*Azeca tridens* (Pult.). Rather rare: Castle Eden; Tanfield; Stella; Middleton-one-Row  
*Cæcilianella acicula* (Müll.). Darlington  
*Pupa anglica* (Fér.). Castle Eden; Wallbottle Dean; Ryhope  
 — *cylindræa* (Da. C.). Frequent on sea banks  
 — *muscorum* (Linn.). Rare: Sunderland; Ryhope, etc.  
*Sphyradium edentulum* (Drap.). Rather rare: Castle Eden; Ryhope Dean  
*Vertigo minutissima*, Hartm. Rare: Clanheugh; Durham  
 — *substriata* (Jeff.). Near Newcastle; Gibside Wood; Heaton Dean; Tanfield; Stella  
 — *pygmæa* (Drap.)  
 — *pusilla*, Müll. Rather rare; Tanfield; Crowhall Mill  
*Balea perversa* (Linn.). Castle Eden Dean; Ryhope Dean  
*Clausilia laminata* (Mont.)  
 — *bidentata* (Strom.)  
*Succinea putris* (Linn.)

##### b. BASOMMATOPHORA

- Carychium minimum*, Müll.  
*Melampus denticulatus* (Mont.). South Shields; Whitburn  
*Alexia myosotis* (Drap.). Seaton Carew  
*Ancylus fluviatilis*, Müll.  
*Velletia lacustris* (Linn.). Rather rare: Middleton-one-Row  
*Limnæa auricularia* (Linn.). Rather rare: near Darlington  
 — *pereger* (Müll.)  
 — *palustris* (Müll.)  
 — *truncatula* (Müll.)  
 — *stagnalis* (Linn.)  
 — *glabra* (Müll.). Elwick Hall; Sedgefield  
*Planorbis corneus* (Linn.). Rare: near Darlington  
 — *albus*, Müll. Local  
 — *gibber*, Jeff. Sedgefield; Whitburn  
 — *nautilus* (Linn.). Whitburn  
 — *carinatus*, Müll. In addition to the ordinary form a white variety has been taken at Bluestone Mill, near Norton  
 — *marginatus*, Drap.



# A HISTORY OF DURHAM

*Planorbis spirorbis*, Müll.

— *contortus* (Linn.) Local : Ryton Haughs ;  
near Stockton

— *fontanus* (Lightf.). Rather rare : Middleton-  
one-Row ; Stockton

*Physa fontinalis* (Linn.)

— *hypnorum* (Linn.)

## II. PROSOBRANCHIATA

*Paludetrina stagnalis* (Bast.). Mouth of the Tees ;  
Seaton Carew

*Bithynia tentaculata* (Linn.)

*Valvata piscinalis* (Müll.)

— *cristata*, Müll.

*Acicula lineata* (Drap.). Rare : Castle Eden Dean

## B. PELECYPODA

*Unio margaritifera* (Linn.). In the head waters of  
some streams

*Anodonta cygnea* (Linn.)

*Sphærium corneum* (Linn.)

— *lacustre* (Müll.)

*Pisidium amnicum* (Müll.). Rare : near Stockton-  
on-Tees, Jesmond Dean

— *pusillum* (Gmel.). Besides the typical form the  
variety, by some held to be a distinct

species, *P. obtusale*, has been taken near  
Darlington

*Pisidium nitidum*, Jenyns. Near Darlington

— *fontinale* (Drap.). In addition to the typical  
form, the variety *P. pulchellum*, by some  
held to be a distinct species, is plentiful

— *milium* (Held.). Brastide, near Durham ;  
Ryton Haughs

# INSECTS

Considering its comparatively small area and northern situation, the county of Durham possesses a fairly numerous insect fauna, although of course not to be compared with more southern districts. The surface of the county is exceedingly varied. Passing inland from the sea all kinds of situations are met with, from the grassy sand-dunes or flower-clad banks of the coast line, up through the highly-cultivated central districts, to the upper dales with their wooded glens and grassy or heather-clad hills. Marshland also is found along the Skern and Lower Tees. Thus maritime, marsh-loving, and Alpine species, as well as those preferring ordinary inland conditions, can all find a congenial habitat within the county. Again, with its three great seaports, through which pass large quantities of foreign timber and produce of various kinds, the county is continually receiving insect stowaways in one or other of their life stages, aliens—in many cases undesirable aliens—some of whom become naturalized in the land of their exile, and thus add to the variety of its insect life. Though far to the north and therefore outside the fringe of European Continental species which spread themselves over the southern counties, Durham, with its eastern situation, receives, at least at its southern border, part of the great migration stream which crosses the German Ocean from the Continent, and there is reason to believe that along with the birds there come from time to time insect immigrants, who either recruit the ranks of former arrivals or add new species to the county list. But, except among the Lepidoptera, the students of insect life within the county have been few. So much so, that almost on the eve of publication I was applied to by the editor to supply some account of the insects of Durham outside of the Lepidoptera and the Diptera, as he had been unable to get anyone to undertake the other orders. Only a few weeks were allowed to complete the work, and I had not made a special study of these other orders, having only undertaken to be responsible for the Diptera. Under these difficult circumstances, I must therefore plead for the indulgence of critics as regards any omissions or mistakes in the following lists, which, however, I believe very fairly represent our actual knowledge of the insect inhabitants of the county up to the present.

## ORTHOPTERA

*Earwigs, Grasshoppers, Crickets, Cockroaches, etc.*

This order has been entirely neglected in Durham, but it is very poorly represented as far as native or naturalised kinds are concerned, and there are probably under a dozen species in the county altogether. But occasionally curious foreigners make their appearance in fruit or cargoes of produce, and some make a vain attempt to obtain a footing, establishing themselves for a time in some sheltered nook and apparently breeding, but eventually destroyed by the severity of the climate or the want of their natural food.

# A HISTORY OF DURHAM

## FORFICULARIA

### *Earwigs*

The common earwig—*Forficula auricularia*, Linn.—is exceedingly common everywhere. Outside of the *Hymenoptera* comparatively few insects ever see their progeny, and the exhibition of parental care beyond the selection of a food plant is very rare. But the female earwig is a most devoted mother, ready to sacrifice her life in the protection of her brood. The Lesser Earwig—*Labia minor*, Linn.—is met with at several places, Birtley and near Hartlepool, etc. *Anisolabia maritima* was abundant at one place, South Shields, in 1857, and during the next two years *Alphitobius picipes* was found in numbers in cavities of Slag in the neighbourhood of the same town.

## BLATTODEA

### *Cockroaches*

There are 800 species of cockroaches, but only five or six inhabit Britain, of which there may be probably two or three in Durham, but there is no record of any except *Blatta orientalis*, Linn., the common house Cockroach or Black Beetle, only too abundant in old houses throughout the county. *Blatta maderæ* has occurred at South Shields, introduced in cargoes. *Panchlora exoleta*, Burn., was taken alive this year at Bishop Auckland, introduced undoubtedly among bananas from South America.

## ACRIDIODEA

### *Grasshoppers*

There are two or three green species, probably *Stenobothrus bicolor*, Chap., and *S. parallelus*, Zett., and the dark *Gomphocerus maculatus*, Thunb., is common on the moors, but they have not been observed with any care. *Gomphocerus rufus* is recorded by Backhouse as taken at Sunderland and Waskerley.

## LOCUSTODEA

### *Locusts*

I do not know of any of the British species having been found in the county, but two foreign species have been taken at Hartlepool, and in 1858 *Pachytylus migratorius* occurred at Sunderland and other places on the coast.

## GRYLLODEA

### *Crickets*

*Gryllotalpa vulgaris*, the Mole Cricket, has been found near Hartlepool, probably introduced. *Gryllus domesticus*, Linn., is not uncommon in old country houses.

## NEUROPTERA

### *Dragonflies, Stone-flies, Lacewings, Caddis-flies, etc.*

This is a very varied group, which contains many of our most splendid insects, but there is no record of its having received any systematic attention in this county. Everyone knows the great *Eschnæ*, the Horse stingers, as they are called, although perfectly innocent of hurting either man or beast, and the gorgeous little *Agrions* that flit in numbers over almost every pond in summer; but local entomologists seem to have been content with mere general observation.

Of the *Libellulidæ*, the only ones that have been recorded are *Platetrum depressum*, a bold, defiant insect of an inquisitive turn of mind, which often brings about its capture where pursuit would be hopeless, and, *Libellula quadrimaculata*, Linn., and *Sympetrum vulgatum*, both of which are to be found in Castle Eden Dene and other localities.

The only British member of the *Cordulegasteridæ*, *Cordulegaster annulatus*, Latr., may also be seen in several places, but it is not often captured. Of the *Eschnidæ*, *Eschna juncea*, Linn., is fairly common in Healden, by the side of the Wear, and at Gibside, and *Eschna grandis* is recorded in Ornsby's *Durham* as having been taken in that neighbourhood. In the beautiful family of the *Calopterygidæ* we have only one species as yet recorded, *Calopteryx virgo*, Linn., but that is said to be common in the Browney valley.



# INSECTS

The last family of Dragonflies, containing the more numerous but smaller species, is that of the *Agrionidae*. I only know of three species, the common *Agrion puella*, Linn., which is abundant by most streams and ponds, *Pyrrhosoma minium*, also common at Gibside and elsewhere, and *Ischnura elegans*, Lind.

*Ephemeridae*, or May-flies, *Perlidae*, or Stone-flies, such as *Perla marginata*, *Nemoura variegata*, *Chloroperla viridis*, and many other species abound along all the numerous water-courses, as do also the *Sialidae* or Alderflies and the moth-like *Trichoptera*, or Caddis-flies, whose curious larva cases, composed of a variety of material according to the species, are very common in every pond and stream.

The Scorpion-fly, *Panorpa communis*, is very common everywhere, and the beautiful Lacewing-fly, or Golden Eye, *Chrysopa vulgaris*, is often to be met with. *Chrysopa perla*, *Megalomus hirtus*, L., *Hemerobius marginatus*, *Ephemerula vulgata*, *Leptiphlebia marginata*, L., *Leptocerus albifrons*, L., *Rhyacophila dorsalis*, Curt., and *Anabolia nervosa* are also recorded locally by Backhouse.

## HYMENOPTERA

Although the most interesting of all the insect tribes, the Hymenoptera have had but little attention paid to them in this county. What has been done has been chiefly in the aculeate section, in which only 101 species or varieties have so far been noted, while the Entomophaga are almost a blank, and the Phytophaga have a list of only twenty-three names. Yet there are nearly 400 Aculeata, about 600 Phytophaga, and a vast host of Entomophaga in the British Isles, and no doubt Durham possesses its fair share for a northern county, but it waits the advent of some painstaking entomologist to lay bare its riches in this deeply interesting order.

### ACULEATA

#### *Ants, Wasps, and Bees*

This is the highest section of the order. Their habits, especially those of the Social species, suggest the possession of something very like a reasoning faculty, and their life histories abound in interesting details. The wonderful adaptations of the various parts to the different needs of each species also supply numberless points of fascinating study. The following list of local species is chiefly that of Bold, to which but a few species have been added in the last fifty years. Only one or two call for special notice. The tiny little red ant *Monomorium pharaonis*, Linn., although not a native, has become a pest in several parts of the county, and especially in the Dipton district, where some of the miners' houses have been rendered uninhabitable by its abundance, and the District Council have had to attempt its destruction. They seem to be incapable of living away from inhabited houses. The rare ant *Ponera contracta*, Latr., is said to have been taken at South Shields, where also *Mutilla europæa*, Linn., has occasionally been found, both probably introduced. *Vespa austriaca*, Pz., has been taken at two places in the Derwent Valley by Mr. Robson of Birtley. As might be expected with its cold northern situation and clayey soil, the county of Durham is weak in the section of the sand wasps and solitary bees, whose habits require a light or sandy soil and the warm, sunny south; but it is strong in the more robust species, and nearly all the Bombi occur in the county.

#### HETEROGYNA

##### FORMICIDÆ

- Formica, Linn.
- rufa, Linn. Common
- fusca, Linn. Abundant
- Lasius, Fab.
- fuliginosus, Latr. Not common
- flavus, De Geer. Common
- niger, Linn. Not very common
- Camponotus sylvaticus has been taken alive at Bishop Auckland in bananas

##### PONERIDÆ

- Ponera, Latr.
- contracta, Latr. South Shields, very rare

##### MYRMICIDÆ

- Myrmica, Latr.
- rubra, Linn.
- r. lævinodis, Nyl. The commonest here
- r. ruginodis, Nyl. Abundant
- r. scabrinodis, Nyl. Common
- r. lobicornis, Nyl. South Shields, rare

##### MYRMICIDÆ (continued)

- Monomorium, Mayr
- pharaonis, Linn. Introduced, but firmly established

#### FOSSORES

##### MUTILLIDÆ

- Mutilla, Linn.
- europæa, Linn. Has been taken occasionally at South Shields (Bold) and Shull (Backhouse)

# A HISTORY OF DURHAM

## POMPIDILÆ

- Pompilus, Fab.  
— plumbeus, Fab. *South Shields*  
— gibbus, Fab. Abundant.  
— pectinipes, V. de L. *South Shields*, rare  
Salius, Fab.  
— exaltatus, Fab. Not common

## SPHEGIDÆ

- Pemphredon, Latr.  
— lugubris, Latr. Common.  
— shuckardi, Mor. Very common  
— lethifer, Shuck. Common.  
Mimesa, Shuck.  
— bicolor, Fab. *Derwentside*  
Gorytes, Latr.  
— tumidus, Panz. *Gibside*  
— mystaceus, Linn. Abundant  
— quadrifasciatus, Fab. *Derwentside*  
Nysson, Latr.  
— spinosus, Fab. *Swalewell*  
Mellinus, Fab.  
— arvensis, Linn. Common  
Crabro, Fab.  
— leucostomus, Linn. Not uncommon at *Gibside*  
— podagricus, V. de L.  
— quadrimaculatus, Dhlb. *Gibside*, rare; *Birtley* (Robson)  
— dimidiatus, Fab. Abundant  
— chrysotomus, Lep. Common  
— vagus, Linn. Common  
— cribrarius, Linn. Common  
— peltarius, Schieb. *Axwell Park*, rare

## DIPLOPTERA

## VESPIDÆ

- Vespa, Linn.  
— vulgaris, Linn. Very abundant  
— germanica, Fab. Not rare. *Birtley* (Robson)  
— rufa, Linn. Common  
— austriaca, Pz. *Shotley Bridge* and *Ebchester* (Robson)  
— sylvestris, Scop. *Hesleden*, *Birtley* (Robson)  
— norvegica, Fab. Common

## FUMIDÆ

- Odynerus, Latr.  
— pumpe, Linn. Common  
— pictus, Curt. *Gibside*, rare; *Birtley* (Robson); *Bishop Auckland*  
— trimarginatus, Zett. Common  
— trifasciatus, Oliv. Common  
— pectinipes, Linn. Very common

## ANTHOPHILA

### OBTUSILINGUES

#### COLLETIDÆ

- Colletes, Latr.  
— daviesana, Smith. *Gibside*

### ACUTILINGUES

#### ANDRENIDÆ

- Sphecodes, Latr.  
— gibbus, Linn. *Castle Eden*, *Axwell Park*  
— ephippia, Linn. Common  
— subquadratus, Smith. *Birtley* (Robson)  
Halictus, Latr.  
— rubicundus, Christ. Common  
— cylindricus, Fab. Common  
— albipes, Kirb. *Gibside*, scarce  
— subfasciatus, Nyl. *Gibsones*  
— villosulus, Kirb. *Gibside*  
— nitidiusculus, Kirb. Rare  
— minutus, Kirb. Common  
Andrena, Fab.  
— albicans, Kirb. Very common  
— rosæ, Ps.

- var. trimmerana, Kirb. Common  
— cineraria, Linn. Common  
— fulva, Schr. *Derwent Valley* (Robson) and *Bishop Auckland* district  
— clarkella, Kirb. Common  
— nigroænea, Kirb. Not uncommon  
— gwynana, Kirb. Not common  
— furcata, Smith. *Birtley* (Robson)  
— cingulata, Fab. *Ravensworth*  
— analis, Panz. *Swalewell*, not uncommon  
— coitana, Kirb. *Gibside*, etc., not uncommon  
— minutula, Kirb. Common  
— proxima, Kirb. *Gibside* (Bold)  
— wilkella, Kirb. *Birtley* (Robson)

#### NOMADA, Fabr.

- succinta, Panz. *Swalewell*  
— alternata, Kirb. Abundant  
— ruficornis, Linn. Common  
— bifida, Thoms. *Bishop Auckland* (W. J. W.)  
— borealis, Zett. *Winton*, not uncommon

#### APIDÆ

- Chelostoma, Latr.  
— florissomne, Linn. Common

## APIDÆ (continued)

- Cœlioxyys, Latr.  
— elongata, Lep. On the Bents at *South Shields*  
Megachile, Latr.  
— willughbiella, Kirb. *Marley Hill*  
— circumcincta, Lep. Abundant on the sea coast. *Birtley* (Robson)  
— centuncularis, Linn. Not common  
Osmia, Panz.  
— rufa, Linn. Not uncommon  
— xanthomelana, Kirb. Rare  
— cærulescens, Linn. Sparingly  
Anthophora, Latr.  
— pilipes, Fab. Not uncommon. *Birtley* (Robson)  
— furcata, Panz. *Gibside*  
Psithyrus, Lep.  
— rupestris, Fab. Rare, although its host, *Bombus lapidarius*, is very common  
— vestalis, Fourc. Like its host, *Bombus terrestris*, it is abundant throughout the county  
— barbutellus, Kirb. Common. It associates with *B. pratorum*  
— campestris, Panz. Very common in association with *B. hortorum*  
*Bombus*, Latr.  
— venustus, Smith. Not common. *Birtley* (Robson)  
— agrorum, Fab. Very common  
— hortorum, Linn. Very common  
— latreillellus, Kirb. *Gibside*. On the coast, etc.  
r. distinguendus, Mor. *Birtley* (Robson)  
— sylvarum, Linn. Not rare  
— derhamellus, Kirb. Rare. *Birtley* (Robson)  
— lapidarius, Linn. Common  
— jonellus, Kirb. *Gibside*. Not common  
— pratorum, Linn. Common  
— terrestris, Linn. Not very common. *Birtley* (Robson)  
r. lucorum, Smith. The commonest of the genus  
*Apis*, Linn.  
— mellifica, Linn. Abundant



# INSECTS

## ENTOMOPHAGA

### *Ichneumon-flies, etc.*

The members of this large section have not been studied in the county. A good number of species are to be found in the miscellaneous drawers of Lepidopterists and others, but they await identification. The following are recorded from Durham in Buckler's *Lepidopterous Larvæ*.

*Platylabus tricuspidatus*, Grav., bred by Mr. Robson at Hartlepool from *Eupithecia pulchellata*, Steph. (the Foglove Pug).

*Paniscus testaceus*, Grav., bred from *Tethea subtusa* (the Olive Moth).

*Meteorus pulchricornis*, Wesm., bred from *Agrotis agathina*, Dup. (the Heath Rustic Moth).

*Pimpla graminellæ*, Schr., bred from *Orgyia antiqua*, Linn. (the Vapourer Moth).

*Apanteles astrarche*, Mar., bred from *Lycæna agestis*, Hub. (the Brown Argus Butterfly).

*Ichneumon ruficeps*, Grav., bred from *Selenia illuminaria*, Hub. (the Early Thorn Moth).

The last five were all bred by Mr. Gardner at Hartlepool.

*Pimpla instigator*, bred from pupa of *Orgyia antiqua*, Linn. (the Vapourer Moth), by Mr. Robson of Hartlepool.

## PHYTOPHAGA

### *Saw-flies, Wood-wasps, and Gall-flies*

This section of the Hymenoptera has received very little attention in Durham, although the species are often large and showy, and the variety in the shaping of the saw-like ovipositor exceedingly interesting. No local entomologist has yet made a study of these insects, which are entirely absent in the older county lists. A few of the larger forms, which had forced themselves, so to speak, on local lepidopterists, I have found in their boxes of rejectamenta.

The Great Yellow Sirex or Wood-wasp (*Sirex gigas*, Linn.) is not uncommon in coal-mines and woodyards, where it has been imported in the pit timber, and it is common in the Shull woods, where it has undoubtedly bred. The Blue Sirex (*Sirex juvenicus*) has also been taken in pine woods on the upper Bedburn in such circumstances as to lead to the reasonable probability of its being county bred. There, also, have been taken on birch these other giants of the section, *Cimbex* and *Trichiosoma*.

The following meagre list contains all the local species that I have been able to verify, but is probably scarcely a tithe of the number inhabiting the county.

### TENTHREDINIDÆ

*Tenthredo*, Htg.

— *livida*, Linn. (Backhouse)  
*Bishop Auckland* (W.)

— *maculata*, Fourc. (Backhouse)  
*Bishop Auckland* (W.)

— *dispar*, Klug. *Shull* (Backhouse)

— *atra*, Linn. *Darlington* (Backhouse)

— *melomela*, Linn. *Bishop Auckland* (W.)

— *obsoleta*, Klug. *Birtley* (Robson)

*Tenthredopsis*, Costa.

— *scutellaris*, Fab. *Bishop Auckland* (W.)

— *tristis*, Ste. *Bishop Auckland* (W.)

— *inornata*, Cam. *Hesleden* (W.)

— *nassata*, Linn. *Bishop Auckland* (W.)

*Macrophya*, Dbm.

— *rupestris*, Klug. (Backhouse)

Allantus, Jurine

— *serphularia*, Linn. *Birtley* (Robson), *Bishop Auckland* (W.)

Allantus, Jurine

— *tricinctus*, Fab. *Castle Eden* (Backhouse), *Hesleden* (W.)

— *arcuatus*, Forst. *Darlington* (Backhouse), *Weardale* (W.)

*Dolerus*, Jurine.

— *lateritius*, Klug. (Backhouse)

— *fulviventris*, Scop. *Darlington* (Backhouse), *Harperley* (W.)

— *palustris*, Klug. *Shull* (Backhouse)

— *anticus*, Klug. *Shull*, etc. (Backhouse), *Gibside* (W.)

— *gonagra*, Fab. *Shull* (Backhouse), *Gibside* (W.)

— *fissus*, Htg. *Bishop Auckland* (W.)

*Selandria*, Leach

— *serva*, Fab. *Gibside* (W.)

*Blennocampa*, Htg.

— *nigrita*, Fab. (Backhouse)

*Athalia*, Leach

— *lugens*, Klug. (Backhouse)

*Cladius*, Ill.

— *pectinicornis*, Fourc. (Backhouse)

— *vinuialis*, Fall. (Backhouse)

*Nematus*, Panz.

— *leucogaster*, Htg. *Marley Hill* (W.)

*Nematus*, Panz.

— *ribesii*, Scop. *Bishop Auckland*, etc. (W.)

*Cimbex*, Oliv.

— *sylvanum*, Fab. *Bedburn* (Greenwell)

*Trichiosoma*, Leach.

— *lucorum*, Linn. *Stockton* (Backhouse), *Bedburn* (Greenwell)

— *betuleti*, Klug. *Stockton* (Backhouse), *Bedburn* (Greenwell), *Birtley* (Robson)

*Abia*, Leach.

— *sericea*, Linn. *Darlington* (Backhouse)

*Hylotoma*, Leach.

— *enodis*, Linn. (Backhouse)

— *ustulata*, Linn. (Backhouse)

— *pagana*, Panz. (Backhouse)

### SIRICIDÆ

*Sirex*, Linn.

— *gigas*, Linn. About ports, woodyards, and in coal-pits, imported. Breeds in *Shull* woods

— *juvenicus*, Linn. *Bedburn* (Greenwell)



# A HISTORY OF DURHAM

## COLEOPTERA

### Beetles

In the county of Durham, the Coleoptera rank next after the Lepidoptera in the attention they have received from local entomologists, but with two or three notable exceptions that attention has been very slight. Fourteen species were recorded for the south of the county in Hogg's *Natural History of the Vicinity of Stockton* in 1827. The Rev. George Ornsby gives a list of 194 beetles in his sketches of Durham in 1846, but as some are included which have not since been recorded they must be looked upon as somewhat doubtful. In the middle of last century, Mr. J. T. Bold of Newcastle began issuing his lists of insects, mostly beetles, of Northumberland and Durham, which he revised and completed in 1870. His catalogue, omitting the species with only Northumberland localities, forms the foundation of the following county list. The work was then carried on by Mr. J. Gardner of Hartlepool, who worked hard for many years and added several new records for the county. And now, when failing eyesight has compelled him to desist, the work has been taken up in the northern part of the county by a most promising young entomologist, Mr. R. S. Bagnall of Winlaton, who has not only confirmed several hundreds of Bold's records, but has added a considerable number of new and rare species to the list. To both of these gentlemen, and also to Mr. C. S. Robson of Birtley, I am indebted for a large amount of information which renders the following list, though hurriedly compiled, a fairly correct record of the county species as at present known. The order is that followed in Beare and Donnithorpe's *Catalogue of British Coleoptera* published last year (1904). The names of the authorities for the records are appended, as they give a general indication of the locality, Bold's name standing for the north of the county in the middle of the 19th century, Gardner's for the south of the county in the later half of the same century, and Bagnall's for the north of the county in the beginning of the 20th century.<sup>1</sup>

#### CICINDELIDÆ

*Cicindela*, L.

— *campestris*, L. (Bold, Bagnall, Gardner)

#### CARABIDÆ

*Cychrus*, F.

— *rostratus*, L. (Bold, Robson, Bagnall)

*Carabus*, L.

— *catenulatus*, Scop. (Bold, Bagnall, Gardner)

— *nemoralis*, Müll. (Bold) Near *Blanchland*, Apr., 1903, by Mr. Campbell (Bagnall)

— *violaceus*, L. (Bold, Robson, Bagnall, Gardner)

— *nitens*, L. (Bold, Bagnall, Gardner)

— *v. niger*, Sem. *Teesdale* (Gardner)

— *granulatus*, L. (Bold)

— *monilis*, F. (Corder, Gardner)

— *arvensis*, Hbst. (Bold, Corder)

*Notiophilus*, Dum.

— *biguttatus*, F. (Bold, Robson, Bagnall, Gardner)

— *obscurus*, Wat. (Bold, Gardner)

— *aquaticus*, L. (Bold, Bagnall, Gardner)

— *pallidus*, Duft. (Bold, Bagnall)

*Leistus*, Fröh.

— *spinibarbis*, F. (Bold, Bagnall, Gardner)

— *fulvibarbis*, Dj. (Bold, Bagnall, Gardner)

— *ferrugineus*, L. (Bold, Bagnall, Gardner)

— *rufescens*, F. (Bold, Bagnall, Gardner)

*Nebria*, Lat.

— *brevicollis*, F. (Bold, Gardner) Also Red variety occasionally (Bagnall)

— *gyllenhali*, Sch. (Bold, Gardner)

*Elaphrus*, F.

— *riparius*, L. (Bold, Bagnall)

— *cupreus*, Duft. (Bold, Bagnall)

*Loricera*, Lat.

— *pilicornis*, F. (Bold, Bagnall)

*Clivina*, Lat.

— *fossor*, L. (Bold, Bagnall, Gardner)

— *collaris*, Hbst. (Bold, Bagnall, Gardner)

*Dyschirius*, Bon.

— *globosus*, Hbst. (Bold)

*Broscus*, Pz.

— *cephalotes*, L. (Bold, Bagnall, Gardner)

*Badister*, Clair.

— *bipustulatus*, F. (Bold, Bagnall, Gardner)

— *sodalis*, Duft. Rare. *Castle Eden Dene* (Bold)

*Licinus*, L.

— *depressus*, Pk. Very rare (Bold, Gardner)

*Stenolophus*, Dj.

— *vespertinus*, Pz. Near *Ryton* (Perkins)

*Bradycellus*, Er.

— *placidus*, Gyll. (Bold, Bagnall, Gardner)

— *cognatus*, Gyll. Rare. On the mountains (Bold, Bagnall, Gardner)

— *distinctus*, Dj. Very rare (Bold). *West Hartlepool*, one specimen (Gardner)

— *verbasci*, Duft. (Bold, Bagnall, Gardner)

— *harpalinus*, Dj. (Bold, Gardner)

— *collaris*, Pk. (Bold, Gardner)

— *similis*, Dj. (Bold, Bagnall, Gardner)

*Harpalus*, Lat.

— *puncticollis*, Pk. (Bold, Gardner)

— *ruficornis*, F. (Bold, Bagnall, Gardner)

— *æneus*, F. (Bold, Bagnall, Gardner)

— *tenebrosus*, Dj. Very rare (Bold)

— *rubripes*, Duft. (Gardner)

— *latus*, L. (Bold, Bagnall, Gardner)

<sup>1</sup> For further list of Coleoptera see Addenda at end of this article.

# INSECTS

## Harpalus, Lat.

— *frœlichii*, Stm. *Winlaton* (Bagnall)

## Dichrotrichus, Duv.

— *pubescens*, Pk. (Bold, Gardner)

## Stomis, Clair.

— *pumicatus*, Pz. (Bold, Bagnall, Gardner)

## Platyderus, Steph.

— *ruficollis*, Marsh. On the coast (Bold, Gardner)

## Pterostichus, Er.

— *cupreus*, L. (Bold, Bagnall)

— *versicolor*, Stm. (Bold, Bagnall, Gardner)

— *madidus*, F. (Bold, Bagnall, Gardner)

— *æthiops*, Pz. (Bold, Gardner)

— *vitreus*, Dj. (Bold, Gardner)

— *parumpunctatus*, Germ. (Bold, Bagnall)

— *niger*, Schal. (Bold, Bagnall, Gardner)

— *vulgaris*, L. (Bold, Bagnall, Gardner)

— *nigrita*, F. (Bold, Bagnall, Gardner)

— *strenuus*, Pz. (Bold, Bagnall, Gardner)

— *diligens*, Stm. (Bold, Bagnall, Gardner)

— *picimanus*, Duft. *Greatham*, very rare (Gardner)

— *vernalis*, Pz. (Bold, Bagnall)

— *striola*, F. (Bold, Bagnall, Gardner)

## Amara, Bon.

— *fulva*, De G. (Bold, Bagnall, Gardner)

— *apricaria*, Pk. (Bold, Bagnall, Gardner)

— *consularis*, Duft. Rarely met with (Bold). *Hartlepool*, very rare (Gardner)

— *aulica*, Pz. (Bold, Robson, Bagnall, Gardner)

— *convexiuscula*. Marsh ballast heaps at *South Shields* (Bold), *Hartlepool* (Gardner)

— *rufocincta*, Dj. Rare, *Hartlepool* (Gardner)

— *bitrons*, Gyll. Mostly on sea coast (Bold)

— *ovata*, F. *Hartlepool* (Gardner)

— *similata*, Gyll. (Bold, Bagnall, Gardner)

— *acuminata*, Pk. (Bold, Bagnall)

— *tubus*, Pk. Bents near *South Shields* (Bold)

— *lunicollis*, Schiod. (Bold, Bagnall, Gardner)

— *spretta*, Dj. *Hartlepool*, local (Gardner)

## Amara, Bon.

— *familiaris*, Duft. (Bold, Bagnall, Gardner)

— *lucida*, Duft. Not uncommon, *Hartlepool* (Gardner)

— *trivialis*, Gyll. (Bold, Bagnall, Gardner)

— *communis*, Pz. (Bold, Bagnall, Gardner)

— *plebeia*, Gyll. (Bold, Bagnall, Gardner)

## Calathus, Bon.

— *cisteloides*, Pz. (Bold, Bagnall, Gardner)

— *fuscus*, F. (Bagnall, Gardner)

— *flavipes*, Fourc. (Bold, Bagnall, Gardner)

— *mollis*, Marsh. (Bold, Bagnall, Gardner)

— *melanocephalus*, L. (Bold, Bagnall, Gardner)

v. *nubigena*, Hal. On the moors (Bagnall)

— *micropterus*, Duft. (Bagnall, Gardner)

## Amphigynus, Hal.

— *piceus*, Marsh. (Bold, Bagnall, Gardner)

## Taphria, Bon.

— *navalis*, Pz. (Bold)

## Pristonychus, Dj.

— *terricola*, Hbst. (Bold, Bagnall, Gardner)

## Sphodrus, Clair.

— *leucophthalmus*, L. (Bold)

## Anchomenus, Er.

— *angusticollis*, F. (Bold, Bagnall)

— *dorsalis*, Mull. (Bold, Bagnall, Gardner)

— *albipes*, F. (Bold, Bagnall, Gardner)

— *oblongus*, F. (Bold, Bagnall)

— *marginatus*, L. Near *South Shields* (Bold). In the old slake, *Hartlepool*, now a dock (Gardner)

— *sexpunctatus*, L. *Blanchland moors* (Campbell)

— *parumpunctatus*, F. (Bold, Bagnall, Gardner)

— *atratus*, Duft. (Bold)

— *viduus*, Pz. v. *mœstus*, Duft. (Bold) Evidently commoner than the type (Bagnall, Gardner)

— *micans*, Nic. (Bold, Bagnall, Gardner)

— *fuliginosus*, Pz. (Bold, Bagnall, Gardner)

— *gracilis*, Gyll. Near *Burnopfield* (Bagnall)

— *piceus*, L. (Bold, Bagnall)

— *expunctatus*, L. *Blanchland Moors* (Campbell, Bagnall)

## Olisthopus, Dj.

— *rotundatus*, Pk. (Bold, Bagnall, Gardner)

## Tachys, Schaum.

— *focki*, Hum. *South Shields* (Bold)

— *bistriatus*, Duft. *South Shields* (Bold)

— *quadrisignatus*, Duft. A single specimen has been taken at *South Shields*, probably introduced (Bold)

## Cillenus, Sam.

— *lateralis*, Sam. (Bold)

## Bembidium, Lat.

— *rufescens*, Guér. (Bold, Bagnall, Gardner)

— *quinquestriatum*, Gyll. (Bold)

— *obtusum*, Stm. (Bold, Gardner)

— *guttula*, F. (Bold, Bagnall, Gardner)

— *mannerheimi*, Sahl. *Hartlepool* (Gardner)

— *biguttatum*, F. (Bold, Gardner)

— *æneum*, Germ. (Bold, Bagnall, Gardner)

— *clarki*, Daws. (Bold, Gardner)

— *minimum*, F. (Bold, Gardner)

— *schüppeli*, Dj. (? Bold)

— *gilvipes*, Stm. (Bold, Gardner)

— *lampros*, Hbst. (Bold, Bagnall)

— *nigricorne*, Gyll. *Blanchland Moors* (Bagnall)

— *tibiale*, Duft. (Bold, Bagnall)

— *atrocæruleum*, Steph. (Bold, Bagnall, Gardner)

— *decorum*, Pz. (Bold, Bagnall, Gardner)

— *nitidulum*, Marsh. (Bold, Gardner)

— *affine*, Steph. (Bold)

— *monticola*, Stm. (Bold, Harris, Gardner)

— *stomoides*, Dj. Rare (Bold, Bagnall). *Teesdale*, rare (Gardner)

— *quadriguttatum*, F. (Bold) *Hartlepool*, local (Gardner)

— *lunatum*, Duf. (Bold) *Hartlepool*, scarce (Gardner)

— *testaceum*, Duft. (Bold)

— *concinnum*, Steph. (Bold, Bagnall, Gardner)

— *femoratum*, Stm. (Bold, Bagnall, Gardner)

— *bruxellense*, Wesm. (Bold)

— *saxatile*, Gyll. (Bold, Bagnall)

— *andreae*, F. (Bold, Gardner)



# A HISTORY OF DURHAM

*Bembidium*, Lat.  
 — *littorale*, Ol. (Bold, Bagnall, Gardner)  
 — *bipunctatum*, L. (Bold, Bagnall)  
 — *punctulatum*, Drap. (Bold, Bagnall, Gardner)  
 — *prasinum*, Duft. (Bold, Bagnall)  
 — *paludosum*, Pz. (Bold, Bagnall, Gardner)  
*Tachypus*, Lac.  
 — *flavipes*, L. (Bold, Bagnall) *Greatham* (Gardner)  
*Aëpus*, Sam.  
 — *marinus*, Ström. (Bold)  
 — *robini*, Lab. Confined to the coast (Bold)  
*Trechus*, Clair.  
 — *discus*, F. *Greatham*, one specimen (Gardner)  
 — *micros*, Hbst. (Bold)  
 — *lpidosus*, Daws. (Bold)  
 — *rubens*, F. *Winton Mill* (Bold)  
 — *minutus*, F. (Bold, Bagnall, Gardner)  
 — *obtus*, Er. (Bold, Gardner)  
 — *secalis*, Pk. (Bold, Bagnall ?)  
*Patrobus*, Dj.  
 — *excavatus*, Pk. (Bold, Bagnall, Gardner)  
 — *assimilis*, Chaud. *Teesdale* (Gardner)  
*Cymindis*, Lat.  
 — *vaporariorum*, L. *Blanchland Moors* (Bagnall) *Teesdale*, very rare (Blatch)  
*Lebia*, Lat.  
 — *chlorocephala*, Hoff. (Bold) *Sunderland* (Corder), *Hartlepool* (Gardner)  
*Demetrias*, Bon.  
 — *atricapillus*, L. Rare (Bold, Gardner)  
*Dromius*, Bon.  
 — *linearis*, Ol. (Bold, Bagnall, Gardner)  
 — *agilis*, F. Rare (Bold)  
 — *meridionalis*, Dj. *Gibside*, (Bold, Bagnall, Gardner)  
 — *quadrinaculatus*, L. (Bold, Bagnall, Gardner)  
 — *quadrinotatus*, Pz. (Bold, Bagnall, Gardner)  
 — *melanocephalus*, Dj. (Bold, Bagnall, Gardner)  
 — *nigriventris*, Th. (Bold, Bagnall, Gardner)  
*Metabletus*, Schl.  
 — *foveola*, Gyll. *Marsden* (Bold)

## HALIPLIDÆ

*Brychius*, Th.  
 — *elevatus*, Pz. (Bold)

*Haliplus*, Lat.  
 — *obliquus*, F. (Bold, Bagnall, Gardner)  
 — *confinis*, Steph. *Marsden* (Bold, Gardner)  
 — *mucronatus*, Steph.  
 — *flavicollis*, Stm. (Bold)  
 — *fulvus*, F. (Bold, Bagnall, Gardner)  
 — *variegatus*, Stm. Very rare (Bold)  
 — *cinereus*, Aub. (? Bold)  
 — *ruficollis*, De G. (Bold, Gardner)  
 — *fluviatilis*, Aub. (Bold, Gardner)  
 — *striatus*, Shp. Common at *Greatham* (Gardner)  
 — *lineatocollis*, Marsh. (Bold, Bagnall, Gardner)

## DYTISCIDÆ

*Noterus*, Clair.  
 — *sparsus*, Marsh. *Greatham* common (Gardner)  
*Laccophilus*, Leach  
 — *interruptus*, Pz. (Bold, Gardner)  
*Hyphydrus*, Ill.  
 — *ovatus*, L. (Bold, Gardner)  
*Cœlambus*, Th.  
 — *versicolor*, Schal. (Bold)  
 — *inæqualis*, F. (Bold, Gardner)  
 — *confluens*, F. (Bold, Gardner)  
 — *parallelogrammus*, Ahr. (Bold, Gardner, Bagnall)  
 — *impressopunctatus*, Schal. (Gardner)  
*Deronectes*, Shp.  
 — *latus*, Steph. *Hartlepool* sands, rare (Gardner)  
 — *assimilis*, Pk. (Bold, Bagnall, Gardner)  
 — *depressus*, F. (Bold, Gardner)  
 — *12-pustulatus*, F. (Bold, Gardner)  
*Hydroporus*, Clair.  
 — *pictus*, F. (Bold, Gardner)  
 — *granularis*, L. (Bold)  
 — *lepidus*, Ol. (Bold, Bagnall, Gardner)  
 — *rivalis*, Gyll. (Bold, Bagnall, Gardner)  
 — *septentrionalis*, Gyll. (Bold, Gardner)  
 — *davisi*, Curt. (Bold, Bagnall, Gardner)  
 — *dorsalis*, F. (Bold, Gardner)  
 — *lineatus*, F. (Bold, Bagnall, Gardner)  
 — *tristis*, Pk. (Bold)  
 — *angustatus*, Stm. (Bold)  
 — *gyllenhali*, Schüd. Rare (Bold)  
 — *morio*, Dj. (Bold)

*Hydroporus*, Clair.  
 — *vittula*, Er. (Bold, Gardner)  
 — *palustris*, L. (Bold, Gardner)  
 — *incognitus*, Shp. Rare (Bold)  
 — *erythrocephalus*, L. (Bold, Bagnall, Gardner)  
 — *rufifrons*, Duft. *Boldon Flats* (Bold)  
 — *melanarius*, Stm. Rare (Bold, Bagnall)  
 — *memnonius*, Nic. (Bold, Gardner)  
 — *obscurus*, Stm. (Bold)  
 — *nigrita*, F. (Bold)  
 — *discretus*, Fair. (Bold, Gardner)  
 — *pubescens*, Gyll. (Bold, Gardner)  
 — *planus*, F. (Bold, Gardner)  
 — *litturatus*, F. (Bold, Gardner)  
 — *marginatus*, Duft. *Greatham* (Gardner)  
 — *obsoletus*, Aub. *Greatham* (Gardner)  
*Agabus*, Leach.  
 — *guttatus*, Pk. (Bold, Bagnall, Gardner)  
 — *biguttatus*, Ol. *Hartlepool* (Gardner)  
 — *paludosus*, F. (Bold, Bagnall, Gardner)  
 — *uliginosus*, L. *Boldon Flats* (Bold)  
 — *unguicularis*, Th. (Bold)  
 — *didymus*, Ol. *Hartlepool* and *Hesleden* (Gardner)  
 — *nebulosus*, Forst. (Bold, Bagnall, Gardner)  
 — *conspersus*, Marsh. (Bagnall, Gardner)  
 — *femoralis*, Pk. (Bold, Bagnall)  
 — *sturmi*, Gyll. (Bold, Bagnall, Gardner)  
 — *chalconotus*, Pz. (Bold, Bagnall)  
 — *bipustulatus*, L. (Bold, Bagnall, Gardner)  
*Platambus*, Th.  
 — *maculatus*, L. (Bagnall ?)  
*Ilybius*, Er.  
 — *fuliginosus*, F. (Bold, Bagnall, Gardner)  
 — *fenestratus*, F. *Greatham* (Gardner)  
 — *ater*, De G. (Bold, Bagnall)  
 — *obscurus*, Marsh. (Bold)  
 — *guttiger*, Gyll. (Bold)  
*Rhantus*, Lac.  
 — *exoletus*, Forst. (Bold, Bagnall)  
 — *pulverosus*, Steph. Rare, (Bold, Gardner)  
*Colymbetes*, Clair.  
 — *fuscus*, L. Bold, Bagnall, Gardner)



# INSECTS

## Dytiscus, L.

— punctulatus, F. (Bold, Bagnall, Gardner)

— marginalis, L. (Bold, Bagnall, Gardner)

## Acilius, Leach.

— sulcatus, L. (Bold, Bagnall, Gardner)

## GYRINIDÆ

### Gyrinus, Geof.

— minutus, F. Not common (Bold)

— nator, Scop. (Bold, Robson, Bagnall, Gardner)

— elongatus, Aub. (Bold)

— bicolor, Pk. (Bold, Gardner)

— marinus, Gyll. (Bold, Bagnall)

— opacus, Sahl. (Bold)

### Orectochilus, Lac.

— villosus, Müll. (Bold, Bagnall, Gardner)

## HYDROPHILIDÆ

### Hydrobius, Leach.

— fuscipes, L. (Bold, Gardner)

### Philhydrus, Sol.

— maritimus, Th. *Greatham*, one specimen (Gardner)

— minutus, F. (Bold)

### Anacæna, Th.

— globulus, Pk. (Bold, Bagnall)

— limbata, F. (Bold, Gardner)

### Laccobius, Er.

— alutaceus, Th. *Hartlepool* (Gardner)

— minutus, L. (Bold, Bagnall)

— bipunctatus, F. *Hartlepool* (Gardner)

### Limnebius, Leach.

— truncatellus, Thunb. (Bold, Gardner)

### Chætarthria, Steph.

— seminulum, Pk. *Winton Mill* (Hardy)

### Helophorus, F.

— rugosus, Ol. (Bold, Bagnall)

— nubilus, F. (Bold, Bagnall, Gardner)

— aquaticus, L. (Bold, Bagnall, Gardner)

v. æqualis, Th. *Greatham* (Gardner)

— æneipennis, Th. (Bold, Gardner)

— obscurus, Muls. v. shetlandicus, Kuw. (Bold)

— atinus, Marsh. *Greatham* (Gardner)

— brevicollis, Th. (Bold, Gardner)

### Hydrochus, Leach.

— elongatus, Schal. *Boldon Flats* (Bold)

## Henicocerus, Steph.

— exsculptus, Germ. (Bold, Gardner)

## Ochthebius, Leach.

— marinus, Pk. *Greatham* (Gardner)

— pygmaeus, F. (Bold)

— bicolon, Germ. (Bold, Bagnall, Gardner)

## Hydræna, Kug.

— riparia, Kug. (Bold, Bagnall)

— nigrita, Germ. (Bold, Gardner)

— angustata, Stm. (Gardner)

— gracilis, Germ. (Bold)

— pygmæa, Wat. *Tyne* (Bold)

— pulchella, Germ. (Bold)

## Cyclonotum, Er.

— orbiculare, F. (Bold, Bagnall)

## Sphæridium, F.

— scarabæoides, L. (Bold, Bagnall, Gardner)

— bipustulatum, F. (Bold, Bagnall, Gardner)

## Cercyon, Leach.

— littoralis, Gyll. (Bold, Gardner)

— depressus, Steph. Very rare (Bold)

— hæmorrhoidalis, F. (Bold, Bagnall, Gardner)

— flavipes, F. (Bold, Bagnall, Gardner)

— lateralis, Marsh. (Bold, Bagnall)

— melanocephalus, L. (Bold, Bagnall, Gardner)

— unipunctatus, L. (Bold, Bagnall, Gardner)

— quisquilius, L. (Bold, Bagnall, Gardner)

— nigriceps, Marsh. (Bold)

— pygmæus, Ill. (Bold, Bagnall)

— terminatus, Marsh. (Bold, Gardner)

— analis, Pk. (Bold, Bagnall)

## Megasternum, Muls.

— boletophagum, Marsh. (Bold, Bagnall, Gardner)

## Cryptopleurum, Muls.

— atomarium, Ol. (Bold, Bagnall, Gardner)

## STAPHYLINIDÆ

### Aleochara, Gr.

— ruficornis, Gr. (Bold, Gardner)

— fuscipes, F. (Bold, Gardner)

— lanuginosa, Gr. (Bold, Gardner)

— mœsta, Gr. (Bold, Gardner)

— nitida, Gr. (Bold, Gardner)

v. bilineata, Gyll. Somewhat rare. Confined to the coast (Bold)

— morion, Gr. (Bold, Gardner)

### Aleochara, Gr.

— grisea, Kr. Rare. Amongst the algae on the shore (Bold, Gardner)

— algarum, Fauv. (Bold)

— obscurella, Er. *Hartlepool*

### Microglossa, Kr.

— pulla, Gyll. *Gibside* (Bold)

### Oxypoda, Man.

— spectabilis, Märk. (Gardner, Bagnall)

— lividipennis, Man. (Bold, Bagnall)

— opaca, Gr. (Bold, Gardner)

— alternans, Gr. (Bold, Gardner)

— exoleta, Er. Very rare. Near *South Shields* (Bold)

— lentula, Er. Near *Ravensthorpe* (Hardy)

— umbrata, Gyll. (Bold)

— nigrina, Wat. (Bold)

— longiuscula, Gr. (Bold)

— annularis, Sahl. (Bold)

### Ischnoglossa, Kr.

— proluxa, Gr. *Saltwell*, very rare. (Bold)

### Phlœopora, Er.

— reptans, Gr. (Bold)

### Ocalea, Er.

— castanea, Er. (Bold, Gardner)

— badia, Er. *Hartlepool* (Blatch)

### Ilyobates, Kr.

— nigricollis, Pk. Coast and *Gibside* (Bold)

### Chilopora, Kr.

— longitarsis, Er. (Bold)

— rubicunda, Er. (Bold)

### Drusilla, Leach.

— canaliculata, F. (Bold, Gardner)

### Callicerus, Gr.

— obscurus, Gr. (Bold)

### Homalota, Man.

— pavens, Er. (Bold)

— cambrica, Woll. *Hartlepool* (Gardner)

— planifrons, Wat. Sands, *South Shields* (Bold)

— gregaria, Er. (Bold)

— imbecilla, Wat. *Hartlepool* (Blatch)

— luridipennis, Man. (Bold)

— gyllenhali, Th. *Team side* (Bold)

— hygrotopora, Kr. (Bold)

— elongatula, Gr. (Bold)

— volans, Scrib. (Bold)

— vestita, Gr. (Bold, Gardner)

— oblongiuscula, Shp. *Team side* (Hardy)

— silvicola, Fuss. *Hartlepool* (Gardner)

— vicina, Steph. (Bold)

— pagana, Er. (Bold)

— graminicola, Gr. (Bold).

# A HISTORY OF DURHAM

## Homalota, Man.

- halobrechtha, Shp. (Bold)
- puncticeps, Th. (Bold)
- occulta, Er. (? Bold)
- fungivora, Th. *Team side* (Hardy)
- picipes, Th. Rare (Bold)
- cæsula, Er. *South Shields and Marsden* (Bold)
- circellaris, Gr. (Bold)
- immersa, Er. Rare (Bold)
- analis, Gr. (Bold, Gardner)
- depressa, Gyll. (Bold, Gardner)
- xanthoptera, Steph. (Bold)
- euryptera, Steph. (Bold)
- trinitata, Kr. (Bold)
- corvina, Th. (? Bold)
- atricolor, Shp. (Bold)
- nigra, Kr. (Bold)
- germana, Shp. (Bold)
- cauta, Er. (Bold, Gardner)
- villosula, Kr. *Saltwell*, rare (Bold)
- atramentaria, Gyll. (Bold, Bagnall, Gardner)
- longicornis, Gr. (Bold, Bagnall)
- sordida, Marsh. (Bold, Gardner)
- aterrima, Gr. (Bold, Bagnall)
- pygmæa, Gr. (Bold)
- muscorum, Bris. (Bold)
- pilosiventris, Th. Rare (Bold)
- laticollis, Steph. (Bold, Gardner)
- fungi, Gr. (Bold, Bagnall, Gardner)
- v. clientula, Er. (Bold)

## Ischnopoda, Th.

- cœrulea, Sahl. (Bold)

## Tachyusa, Er.

- flavitarsis, Sahl. (Bold)
- umbratica, Er. (Bold)

## Myrmecopora, Saulcy.

- uvida, Er. *Marsden* (Hardy)

## Falagria, Steph.

- sulcata, Pk. (Bold)
- thoracica, Curt. Very rare. (Bold)
- obscura, Gr. (Bold)

## Autalia, Steph.

- impressa, Ol. (Bold, Gardner)
- rivularis, Gr. (? Bagnall)

## Gyrophæna, Man.

- palubella, Heer. *Hartlepool* (Gardner)
- affinis, Man. (Bold)
- gentilis, Er. (Bold, Gardner)
- nana, Pk. (Bold, Gardner)
- minima, Er. (Bold)
- lævipennis, Kr. (Bold)
- manca, Er. Rare (Bold, Gardner)
- tritula, Er. *Hartlepool* (Gardner)

## Agaricochara, Kr.

- lævicollis, Kr. *Ravensworth* (Hardy)

## Leptusa, Kr.

- fumida, Er. (Bold)

## Sipalia, Rey.

- ruficollis, Er. (Bold)

## Bolitochara, Man.

- lucida, Gr. *Castle Eden Dene* (Bold)
- lunulata, Pk. (Bold)
- obliqua, Er. (Gardner, Bagnall)

## Phytosus, Curt.

- spinifer, Curt. *Hartlepool* (Blatch)
- balticus, Kr. *Hartlepool* (Gardner)

## Oligota, Man.

- inflata, Man. (Bold)

## Myllæna, Er.

- dubia, Gr. (Bold)
- elongata, Mat. (Bold)
- brevicornis, Mat. *Hartlepool* (Gardner)

## Gymnusa, Gr.

- brevicollis, Pk. (Bold)
- læviusculus, Man. *Hartlepool* (Gardner)

## Conosoma, Kr.

- littoreum, L. (Bold, Bagnall)
- pubescens, Gr. (Bold, Bagnall, Gardner)
- immaculatum, Steph. *Marsden* (Perkins)
- lividum, Er. (Bold, Bagnall, Gardner)

## Tachyporus, Gr.

- obtusus, L. (Bold, Bagnall, Gardner)
- solutus, Er. Very rare. (Bold, Gardner ?)
- chrysomelinus, L. (Bold, Bagnall, Gardner)
- humerosus, Er. (Bold, Gardner)
- hypnorum, F. (Bold, Gardner)
- pusillus, Gr. (Bold, Gardner)
- brunneus, F. (Bold, Bagnall, Gardner)
- transversalis, Gr. (Bagnall)

## Lamprinus

- saginatus, Gr. *Hartlepool*, very rare (Gardner)

## Cileca, Duv.

- silphoides, L. (Bold, Gardner)

## Tachinus, Gr.

- flavipes, F. *Hartlepool* (Gardner)
- humeralis, Gr. (Bold, Gardner)
- proximus, Kr. Very rare (Bold, Gardner)
- pallipes, Gr. *Hartlepool* (Gardner)

## Tachinus, Gr.

- rufipes, De G. (Bold, Bagnall, Gardner)
- subterraneus, L. (Bold, Bagnall, Gardner)
- marginellus, F. (Bold, Gardner)
- laticollis, Gr. (Bold, Gardner)
- collaris, Gr. (Bold, Bagnall, Gardner)
- elongatus, Gyll. (Bold, Bagnall, Gardner)

## Megacronus, Th.

- analis, Pk. (Bold, Bagnall, Gardner)
- inclinans, Gr. *Ravensworth*, 1 spec. (Bold) ; *Hartlepool*, rare (Gardner)

## Bryoporous, Kr.

- castaneus, Hardy. *Hartlepool*, rare (Gardner)

## Bolitobius, Steph.

- lunulatus, L. (Bold, Gardner)
- trinitatus, Er. (Bold, Bagnall, Gardner)
- exoletus, Er. (Bold, Gardner)
- pygmæus, F. (Bold, Gardner)

## Mycetoporus, Man.

- splendens, Marsh. Rare (Bold, Gardner)
- lepidus, Gr. (Bold, Gardner)
- longulus, Man. Rare, (Bold, Gardner)
- nanus, Er. *Hartlepool*, abundant (Gardner)

## Quedius, Leach.

- longicornis, Kr. *Hartlepool* and *Teesdale*, rare (Gardner)
- lateralis, Gr. (Bold, Gardner)
- mesomelinus, Marsh. (Bold)
- fulgidus, F. (Bold, Gardner)
- cinctus, Pk. (Bold, Gardner)
- fuliginosus, Gr. (Bold, Bagnall, Gardner)
- tristis, Gr. (Bold, Gardner)
- molochinus, Gr. (Bold, Gardner)
- picipes, Man. (Bold, Bagnall, Gardner)
- nigriceps, Kr. Rare (Bold)
- fumatus, Steph. (Bold, Gardner)
- maurorufus, Gr. *Gibside* (Bold)
- umbrinus, Er. Rare (Bold, Gardner)
- scintillans, Gr. Very rare (Bold, Gardner)
- auricomus, Kies. *Hartlepool* and *Teesdale* (Gardner)
- rufides, Gr. *South Shields* (Bold, Bagnall, Gardner)
- attenuatus, Gyll. (Bold, Gardner)
- semicaneus, Steph. (Bold, Bagnall)



# INSECTS

## Quedius, Leach.

- fulvicollis, Steph. Rare (Bold, Bagnall)
- boop, Gr. (Bold, Bagnall, Gardner)

## Creophilus, Man.

- maxillosus, L. (Bold, Bagnall, Gardner)
- v. ciliaris, Steph. *Derwent valley*, rare (Bagnall)

## Leistotrophus, Pert.

- nebulosus, F. (Bold, Bagnall, Gardner)
- murinus, L. Very rare (Bold)
- Staphylinus, L.
- pubescens, De G. (Bold, Gardner, Bagnall)
- stercorarius, Ol. (Bold, Gardner)
- erythropterus, L. (Bold, Bagnall)
- cæsareus, Ceder. Not frequent (Bold)

## Ocypus, Er.

- olens, Müll. (Bold, Robson, Bagnall, Gardner)
- similis, F. Rare. (Bold)
- brunnipes, F. (Bold, Bagnall, Gardner)
- fuscatus, Gr. (Bold, Bagnall, Gardner)
- cupreus, Ross. (Bold, Bagnall, Gardner)
- ater, Gr. (Bagnall ?) *Greatham* (Gardner)
- morio, Gr. (Bold, Bagnall, Gardner)

## Philonthus, Curt.

- splendens, F. (Bold, Bagnall, Gardner)
- intermedius, Bois. Very rare. *Harlepool* (Hardy)
- laminatus, Creutz. (Bold, Bagnall)
- æneus, Ross. (Bold, Gardner)
- proximus, Kr. (Bold)
- addendus, Shp. (Bold)
- carbonarius, Gyll. Rare (Bold)
- scutatus, Er. Sparingly (Bold)
- decorus, Gr. (Bold, Gardner)
- politus, F. (Bold, Gardner)
- varius, Gyll. (Bold, Bagnall, Gardner)
- marginatus, F. (Bold, Gardner)
- albipes, Gr. Rare and local (Bold)
- umbratilis, Gr. Not common (Bold, Gardner)
- cephalotes, Gr. (Bold, Gardner)
- fimetarius, Gr. (Bold, Bagnall, Gardner)
- sordidus, Gr. (Bold)
- ebeninus, Gr. (Bold, Gardner)
- fumigatus, Er. (Bold)

## Philonthus, Curt.

- debilis, Gr. (Bold, Gardner)
- sanguinolentus, Gr. Rare. Coast (Bold, Gardner)
- longicornis, Steph. (Bold)
- varians, Pk. (Bold, Gardner)
- ventralis, Gr. (Bold)
- discoideus, Gr. (Bold, Gardner)
- micans, Gr. *Boldon Flats* (Bold)
- nigrutilus, Gr. (Bold)
- trossulus, Nor. (Gardner)
- puella, Nor. Not common. (Bold, Gardner)

## Cafius, Steph.

- fucicola, Curt. (Hardy, Gardner)
- xantholoma, Gr. (Bold, Bagnall, Gardner)

## Xantholinus, Ser.

- fulgidus, F. Rare. (Bold)
- glabratus, Gr. (Bold, Bagnall, Gardner)
- punctulatus, Pk. (Bold, Bagnall, Gardner)
- ochraceus, Gyll. (Bold)
- tricolor, F. (Bold, Gardner)
- linearis, Ol. (Bold, Bagnall, Gardner)
- longiventris, Heer. (Bagnall)

## Leptacinus, Er.

- parumpunctatus, Gyll. Not frequent (Bold)
- batychnus, Gyll. Rather rare (Bold)
- linearis, Gr. (Bold)

## Baptolinus, Kr.

- alternans, Gr. (Bold, Bagnall, Gardner)

## Othius, Steph.

- fulvipennis, F. (Bold, Bagnall, Gardner)
- melanocephalus, Gr. (Bold, Bagnall, Gardner)
- myrmecophilus, Kies. (Bold, Gardner)

## Lathrobium, Gr.

- elongatum, L. (Bold, Gardner)
- boreale, Hoch. (Bold, Gardner)
- fulvipenne, Gr. (Bold, Bagnall, Gardner)
- brunnipes, F. (Bold, Bagnall, Gardner)
- multipunctum, Gr. Rare, *Derwent, Tyne*, etc. (Bold)

## Cryptobium, Man.

- glaberrimum, Hbst. (? Bold)

## Stilicus, Lat.

- rufipes, Germ. Rare (Bold)
- orbiculatus, Pk. (Bold)
- affinis, Er. (Bold, Gardner)

## Medon, Steph.

- pocifer, Peyr. Rare. *South Shields* (Bold)

## Medon, Steph.

- fuscus, Man. Rare. *South Shields* (Bold). The only north record (?)
- melanocephalus, F. Not common (Bold)
- obsoletus, Nor. Very rare. *South Shields* (Bold)

## Lithocharis, Lac.

- ochracea, Gr. (Bold)

## Evæsthetus, Gr.

- scaber, Gr. (Bagnall ?)

## Dianous, Curt.

- cœrulescens, Gyll. (Bagnall, Gardner)

## Stenus, Lat.

- biguttatus, L. (Bold, Bagnall)
- guttula, Müll. (Bold)
- bimaculatus, Gyll. (Bold, Bagnall, Gardner)
- juno, F. (Bold, Bagnall, Gardner)
- speculator, Lac. (Bold, Bagnall, Gardner)
- providus, Er., v. rogeri, Kr. Rare (Bold, Bagnall)
- bupthalmus, Gr. (Bold, Bagnall)
- melanopus, Marsh. (Bold)
- atratulus, Er. (Bold)
- canaliculatus, Gyll. (Bold)
- pusillus, Er. (Bold, Bagnall)
- declaratus, Er. (Bold)
- argus, Gr. Very rare (Bold)
- nigrutilus, Gyll. Rare (Bold, Gardner)
- brunnipes, Steph. (Bold, Bagnall)
- subæneus, Er. (Bold, Gardner)
- ossium, Steph. (Bold, Gardner)
- impressus, Germ. (Bold, Bagnall, Gardner)
- pallipes, Gr. Rare. *Gibside and Ravensworth* (Hardy)
- flavipes, Steph. (Bold, Bagnall, Gardner)
- pubescens, Steph. (Bold)
- binotatus, Ljun. (Bold, Bagnall)
- pallitarsis, Steph. (Bold, Bagnall)
- bifoveolatus, Gyll. (Bold, Bagnall)
- nitidiusculus, Steph. (Bold)
- picipes, Steph. (Bold, Gardner)
- similis, Hbst. (Bold, Bagnall)
- paganus, Er. Rare. *Gibside and Ravensworth* (Bold)

## Bledius, Man.

- arenarius, Pk. (Bold)
- subterraneus, Er. *Derwent* (Bold)
- opacus, Bold. *Derwent* (Bold)



# A HISTORY OF DURHAM

- Platystethus*, Man.  
 — *arenarius*, Fourc. (Bold, Gardner)  
*Oxytelus*, Gr.  
 — *rugosus*, F. (Bold, Bagnall, Gardner)  
 — *sculptus*, Gr. (Bold)  
 — *laqueatus*, Marsh. (Bold, Gardner)  
 — *sculpturatus*, Gr. (Bold, Gardner)  
 — *maritimus*, Th. (Bold, Gardner)  
 — *nitidulus*, Gr. (Bold, Gardner)  
 — *complanatus*, Er. (Bold)  
 — *tetracaratus*, Block. (Bold)  
*Haploderus*, Steph.  
 — *cælatus*, Gr. Rare (Bold)  
*Trogophloeus*, Man.  
 — *arcuatus*, Steph. Very rare (Bold)  
 — *bilineatus*, Steph. (Bold)  
 — *elongatulus*, Steph. Rare. Algæ on coast (Bold)  
 — *pusillus*, Gr. (Bold)  
*Syntomium*, Er.  
 — *æneum*, Müll. (Bold, Gardner)  
*Coprophilus*, Kr.  
 — *striatulus*, F. (Bold, Bagnall, Gardner)  
*Anthophagus*, Gr.  
 — *testaceus*, Gr. (Bold, Bagnall, Gardner)  
*Geodromicus*, Redt.  
 — *plagiatus*, Heer., v. *nigrita*, Müll. *Derwent* (Bold)  
*Lesteva*, Kr.  
 — *longelytrata*, Gœz. (Bold, Bagnall, Gardner)  
 — *punctata*, Er. (Bold, Gardner)  
*Acidota*, Steph.  
 — *crenata*, F. (Hardy, Gardner)  
 — *arantata*, Man. *Teesdale* (Gardner)  
*Olophrum*, Er.  
 — *piceum*, Gyll. (Bold, Bagnall, Gardner)  
 — *fulvum*, Gr. *Hartlepool* (Gardner)  
*Lathrimæum*, Er.  
 — *atræcephalum*, Gyll. (Bold, Bagnall, Gardner)  
 — *unicolor*, Steph. (Bold, Bagnall, Gardner)  
*Deliphrum*, Er.  
 — *testaceum*, Pk. (Bold, Bagnall, Gardner)  
*Micralymma*, West.  
 — *brevipenne*, Gyll. Sparingly. On coast (Bold)  
*Philorinum*, Kr.  
 — *cardium*, Steph. (Bold)
- Coryphium*, Steph.  
 — *angusticollis*, Steph. (Bold)  
*Homalium*, Gr.  
 — *rivulare*, Pk. (Bold, Bagnall, Gardner)  
 — *rugulipenne*, Rye. *Hartlepool* (Gardner)  
 — *læviusculum*, Gyll. (Bold, Gardner)  
 — *riparium*, Th. (Bold, Gardner)  
 — *allardi*, Fair. (Bold)  
 — *exiguum*, Gyll. Rare (Bold)  
 — *oxyacanthæ*, Gr. (Bold, Gardner)  
 — *excavatum*, Steph. (Bold)  
 — *cæsum*, Gr. (Bold)  
 — *pusillum*, Gr. (Bold)  
 — *rufipes*, Fourc. Not common (Bold)  
 — *vile*, Er. (Bold, Bagnall, Gardner)  
 — *iopterum*, Steph. Rare (Bold)  
 — *concinnum*, Marsh. (Bold, Bagnall, Gardner)  
 — *striatum*, Gr. *Boldon Flats* (Bold)  
*Acrulia*, Th.  
 — *inflata*, Gyll. *Ravensworth* (Hardy)  
*Eusphalerum*, Kr.  
 — *primula*, Steph. *Gibside* (Bold), *Primrose and Guelderrose*; *Gibside* (Bagnall); *Hartlepool* (Gardner)  
*Anthobium*, Steph.  
 — *minutum*, F. (Bold, Gardner)  
 — *ophthalmicum*, Pk. (Bold, Gardner)  
 — *torquatum*, Marsh. (Bold, Bagnall)  
 — *sorbi*, Gyll. (Bold, Bagnall)  
*Proteinus*, Lat.  
 — *ovalis*, Steph. (Bold, Bagnall)  
 — *brachypterus*, F. (Bold, Bagnall, Gardner)  
*Megarthus*, Steph.  
 — *denticollis*, Beck. (Bold)  
 — *affinis*, Müll. (Bold)  
 — *depressus*, Pk. (Bold, Bagnall, Gardner)  
 — *sinuatocollis*, Lac. (Bold, Gardner)  
*Phlæocharis*, Man.  
 — *subtilissima*, Man. (Bold)  
*Clambus*, Fisch.  
 — *armadillo*, De G. (Bold)  
 — *minutus*, Stm. (Bold)
- SULPHIDÆ  
*Agathidium*, Ill.  
 — *nigripenne*, Kug. (Bold, Bagnall, Gardner)
- Agathidium*, Ill.  
 — *atrum*, Pk. (Bagnall ?)  
 — *marginatum*, Stm. (Bold, Gardner)  
 — *varians*, Beck. (Bold, Bagnall ?)  
 — *rotundatum*, Gyll. Rare (Bold). *Lockhaugh* (Bagnall)  
 — *nigrinum*, Stm. *Gibside* (Bold)  
*Liodes*, Lat.  
 — *humeralis*, Kug. (Bold, Bagnall, Gardner)  
 — *glabra*, Kug. Rare (Bold, Bagnall)  
*Cyrtusa*, Er.  
 — *minuta*, Ahr. One specimen in a pond near *Hartlepool* (Gardner)  
*Anisotoma*, Ill.  
 — *dubia*, Kug. (Bold, Gardner, Bagnall)  
 — *badia*, Stm. *Hartlepool* (Gardner)  
 — *ovalis*, Schm. (Bold)  
 — *punctulata*, Gyll. (Bold, Gardner)  
 — *calcarata*, Er. (Gardner)  
 — *curvipes*, Schm. *Hartlepool*, one specimen (Gardner)  
 — *triepkei*, Schm. *Hartlepool*, one specimen (Gardner)  
 — *rugosa*, Steph. *Hartlepool* (Gardner)  
*Colenis*, Er.  
 — *dentipes*, Gyll. (Bold)  
*Hydnobius*, Schm.  
 — *perrisi*, Fair. *Gateshead*, very rare (Bold); *Hartlepool*, numerous (Gardner)  
 — *punctatissimus*, Steph. Very rare. *Saltwell* (Kirwood)  
 — *punctatus*, Stm. *Hartlepool*, one specimen (Gardner)  
*Necrophorus*, F.  
 — *humator*, Gœz. (Bold, Robson, Bagnall, Gardner)  
 — *mortuorum*, F. (Bold, Bagnall, Gardner)  
 — *vestigator*, Hers. *Bisley* (Robson)  
 — *ruptator*, Er. (Bold, Bagnall, Gardner)  
 — *vespillo*, L. (Bold, Bagnall)  
*Necrodes*, Wilk.  
 — *littoralis*, L. (Bold, Bagnall, Gardner)  
*Silpha*, L.  
 — *tristis*, Ill. (Bold, Bagnall, Gardner)  
 — *nigrita*, Cr. (Bold, Bagnall)  
 — *obscura*, L. Rare (Bold, Gardner)  
 — *quadripunctata*, L. Rare *Gibside* (Perkins)

# INSECTS

- Silpha*, L.  
 — *thoracica*, L. (Bold, Bagnall, Gardner)  
 — *rugosa*, L. (Bold, Bagnall, Gardner)  
 — *sinuata*, F. Rare (Bold, Gardner)  
 — *dispar*, Hbst. *South Shields*, rare (Bold)  
 — *laevigata*, F. (Bold, Gardner)  
 — *atrata*, L. (Bold, Robson, Bagnall, Gardner)  
 v. *brunnea*, Hbst. Uncommon, *Derwent Valley* (Bagnall, Gardner)

- Choleva*, Lat.  
 — *angustata*, F. (Bold, Bagnall, Gardner)  
 — *cisteloides*, Fröh. (Bold, Bagnall, Gardner)  
 — *spadicea*, Stm. (Bagnall)  
 — *agilis*, Ill. *Marsden* (Hardy, Bagnall, Gardner)  
 — *velox*, Spence. (Bold, Bagnall, Gardner)  
 — *wilkinsi*, Spence. (Bold, Bagnall, Gardner)  
 — *anisotomoides*, Spence. (Bold)  
 — *fusca*, Pz. (Gardner)  
 — *nigricans*, Spence. (Bold, Bagnall, Gardner)  
 — *longula*, Kell. *Hartlepool*, very rare. (Gardner)  
 — *morio*, F. Rare (Bold, Bagnall, Gardner)  
 — *grandicollis*, Er. (Bold, Bagnall, Gardner)  
 — *nigrita*, Er. (Bold, Bagnall)  
 — *tristis*, Pz. (Bold, Gardner)  
 — *kirbyi*, Spence. (Bold)  
 — *chrysomeloides*, Pz. (Bold, Bagnall, Gardner)  
 — *fumata*, Spence. (Bagnall, Gardner)  
 — *watsoni*, Spence. (Bold)

- Catops*, Pk.  
 — *sericeus*, Pz. (Bold, Bagnall, Gardner)

- Colon*, Hbst.  
 — *brunneum*, Lat. Rare (Bold)  
 — *denticulatum*, Kr. *Hartlepool*, one specimen. (Gardner)

## SCYDMÆNIDÆ

- Scydmanus*, Lat.  
 — *collaris*, Müll. (Bold)  
 — *pusillus*, Müll. Hotbeds, *Gilesgate Moor, Durham*. (Little)  
*Euconnus*, Th.  
 — *lenticilis*, Ill. Hotbeds, *Gilesgate Moor, Durham*. (Little)  
 — *fimetiarius*, Chaud. (Bold)

- Eumicrus*, Lap.  
 — *tarsatus*, Müll. *Durham* (Bold), *Teesdale* (Gardner)

## PSELAPHIDÆ

- Bythinus*, Leach.  
 — *puncticollis*, Den. (Bold)  
 — *bulbifer*, Reich. (Bold, Bagnall ?)  
 — *curtisi*, Den. *Gibside* (Hardy)  
 — *securiger*, Reich. *Ravensworth* (Bold)  
 — *burrelli*, Den. *Hartlepool* (Blatch)

- Bryaxis*, Leach.  
 — *juncorum*, Leach. (Bold)  
*Euplectus*, Leach.  
 — *nanus*, Reich. (Bold)  
 — *minutus*, Marsh. (Bold)

- Trichopteryx*, Kirb.  
 — *thoracica*, Waltl. (? Bold)  
 — *atomaria*, De G. (Bold)  
 — *grandicollis*, Man. (? Bold)  
 — *lata*, Mots. Rather rare (Bold)  
 — *fascicularis*, Hbst. Very rare (Bold)  
 — *sericans*, Heer. Very rare (Bold)

- *pivicornis*, Man. Rare (Bold)  
 — *montandoni*, All. Very rare (Bold)  
 — *chevrolati*, All. Rare (Bold)

- Nephanes*, Th.  
 — *titan*, New. Very rare (Bold)  
*Ptilium*, Er.  
 — *foveolatum*, All. Rare (Bold)

- Ptenidium*, Er.  
 — *punctatum*, Gyll. Coast, on *Algæ* (Bold)  
 — *nitidum*, Heer. (Bold)  
 — *evanescens*, Marsh. (Bold)  
 — *wankowiezi*, Mat. (? Bold)  
 — *formicetorum*, Kr. Very rare (Bold)

## PHALACRIDÆ

- Phalacrus*, Pk.  
 — *corruscus*, Pk. *South Shields* (Hardy)  
*Olibrus*, Er.  
 — *æneus*, F. *Winlaton Mill* (Bagnall)

## COCCINELLIDÆ

- Hippodamia*, Muls.  
 — *13-punctata*, L. (Bold, Bagnall)  
*Adalia*, Muls.  
 — *obliterata*, L. (Bold, Bagnall)  
 — *bipunctata*, L. (Bold, Bagnall, Gardner)

- Mysia*, Muls.  
 — *oblongoguttata*, L. (Bold, Bagnall, Gardner)

- Anatis*, Muls.  
 — *ocellata*, L. Not common (Bold, Bagnall, Gardner)

- Coccinella*, L.

- *10-punctata*, L. (Bold, Bagnall, Gardner)  
 — *hieroglyphica*, L. Rare (Bold)  
 — *11-punctata*, L. (Bold, Robson, Bagnall, Gardner)  
 — *5-punctata*, L. (Bold) Rare (Bagnall)  
 — *7-punctata*, L. (Bold, Robson, Bagnall, Gardner)

- Halysia*, Muls.  
 — *14-guttata*, L. (Bold)  
 — *18-guttata*, L. (Bold, Bagnall)  
 — *22-punctata*, L. (Bold, Bagnall, Gardner)

- Micraspis*, Redt.  
 — *16-punctata*, L. (Bold)

- Scymnus*, Kug.  
 — *pygmaeus*, Fourc. *Hartlepool* (Hardy)

- *suturalis*, Thumb. (Bold)  
 — *testaceus*, Mots. (Bold)

- Exochomus*, Redt.

- *quadripustulatus*, L. (Bold)

- Rhizobius*, Steph.

- *litura*, F. (Bold, Bagnall)

- Coccidula*, Kug.

- *rufa*, Hbst. (Bold, Bagnall, Gardner)

## ENDOMYCHIDÆ

- Mycetæa*, Steph.  
 — *hirta*, Marsh. (Bold, Bagnall, Gardner)  
*Endomychus*, Pz.  
 — *coccineus*, L. (Bold)

## EROTYLIDÆ

- Triplax*, Pk.  
 — *rusica*, L. *Gibside* (Bagnall)  
 — *ænea*, Schal. (Bold, Bagnall)  
 — *bicolor*, Gyll. *Gibside* (Bagnall)

## COLYDIIDÆ

- Cerylon*, Lat.  
 — *histeroides*, F. Rare (Bold, Bagnall)  
 — *fagi*, Bris. *Winlaton Mill*, rotten wood, one specimen (Bagnall)  
 — *ferrugineum*, Steph. *Winlaton, Gibside, &c.*, in rotten oak (Bagnall)  
*Murmidiu*, Leach.  
 — *ovalis*, Beck. Has been found alive in Bengal rice (Bold)

# A HISTORY OF DURHAM

## HISTERIDÆ.

### Hister, L.

- unicolor, L. (Bold, Bagnall)
- cadaverinus, Hoff. (Bold, Bagnall, Gardner)
- succicola, Th. (Bold, Bagnall, Gardner)
- purpurascens, Hbst. Very rare (Bold)
- neglectus, Germ. Very rare (Bold)
- carbonarius, Ill. (Bold, Bagnall ?)
- 12-striatus, Schr. (Bold)
- bimaculatus, L. (Bold, Bagnall, Gardner)

### Carcinops, Mars.

- 14-striata, Steph. Rare, *South Shields and Jarrow* (Bold)

### Gnathoncus, Duv.

- nannetensis, Mars. Rare. *Roker* (? Peacock)

### Saprinus, Er.

- nitidulus, Pk. (Bold, Gardner)
- æneus, F. (Bold, Gardner)
- virescens, Pk. *Marsden* (Wailles, Gardner)

### Hypocaccus, Th.

- rugifrons, Pk. *South Shields* (Bold)

### Pachylopus, Er.

- maritimus, Steph. (Bold) *Stockton*

### Acritus, Lec.

- minutus, Hbst. (Bold)

### Onthophilus, Leach.

- striatus, F. (Bold, Gardner)

## MICROPEPLIDÆ.

### Micropeplus, Lat.

- porcatus, Pk. (Bold, Gardner)
- staphylinoides, Marsh. Rare (Bold, Gardner)
- margaritæ, Duv. Rather rare (Bold, Gardner)

## NITIDULIDÆ.

### Brachypterus, Kug.

- gravidus, Ill. *Winlaton* (Bagnall)
- pubescens, Er. (Bold, Bagnall)
- urticæ, F. (Bold, Bagnall)

### Cercus, Lat.

- pedicularius, L. (Bold) *Gibside* (Bagnall)
- bipustulatus, Pk. (Bold, Bagnall)
- rufilabris, Lat. (Bold, Bagnall)

### Carpophilus, Leach.

- hemipterus, L. (Bold)

### Epuræa, Er.

- æstiva, L. (Bold, Bagnall)
- melina, Er. Very rare (Bold, Bagnall)
- longula, Er. *Gibside*, one male (Bagnall)
- deleta, Er. (Bold, Bagnall, Gardner)
- parvula, Stm. Rather rare (Bold, Bagnall)
- obsoleta, F. (Bold, Bagnall, Gardner)
- pusilla, Ill. (Bold, Bagnall, Gardner)

### Nitidula, F.

- bipustulata, L. (Bold, Bagnall)
- rufipes, L. *Tyneside* (Hardy)
- flexuosa, F. *South Shields*, introduced (Bold)

### Soronia, Er.

- punctatissima, Ill. (Bold)
- grisea, L. (Bold, Bagnall, Gardner)

### Omosita, Er.

- depressa, L. (Bold, Bagnall)
- colon, L. (Bold, Bagnall)
- discoidea, F. (Bold, Bagnall, Gardner)

### Pocadius, Er.

- ferrugineus, F. *Gibside* (Bold)

### Meligethes, Kirb.

- rufipes, Gyll. Rare (Bold, Bagnall)
- lumbaris, Stm. Not common (Bold, Gardner)
- æneus, F. (Bold, Gardner)
- viridescens, F. (Bold, Bagnall, Gardner)
- pedicularius, Gyll. Very rare (Bold)
- flavipes, Stm. (Bold, Bagnall)
- picipes, Stm. (Bold, Bagnall ?)
- obscurus, Er. Near *Winlaton* (Bagnall)
- erythropus, Gyll. (Bold, Gardner)
- brevis, Stm. (Bold)
- v. mutabilis, Rosen. *Hartlepool* (Gardner), rare

### Cychramus, Kug.

- luteus, F. Rare (Bold, Bagnall, Gardner)
- fungicola, Heer. (Bold, Bagnall, Gardner)

### Ips, F.

- quadriguttata, F. Rare (Bold)
- quadripunctata, Hbst. (Bold) Rare. *Winlaton Mill* (Bagnall)
- quadripustulata, L. (Bold) *Teesdale* (Gardner)

### Pityophagus, Shuck.

- ferrugineus, F. (Bold)

### Rhizophagus, Hbst.

- cribratus, Gyll. *Teesdale* (Gardner)
- depressus, F. (Bold, Bagnall)
- perforatus, Er. *Rowland's Gill* (Bagnall)
- parallelocollis, Gyll. (Bold)
- ferrugineus, Pk. (Bold, Bagnall)
- dispar, Pk. (Bold) *Lockhaugh* (Bagnall)
- bipustulatus, F. (Bold) *Derwent Valley*, common (Bagnall)
- cœruleipennis, Sahl. Rare. *Derwent* (Hardy)

## TROGOSITIDÆ

### Tenebrioides, Pill.

- mauritanicus, L. Imported in rice (Bold). *Byermoor* (F Johnson)

### Thymalus, Lat.

- limbatus, F. Very rare. *Ravensworth* (Bold)

## MONOTOMIDÆ

### Monotoma, Hbst.

- picipes, Hbst. (Bold)
- rufa, Redt. Very rare. *South Shields* (Bold)
- longicollis, Gyll. (Bold)

## LATHRIDIIDÆ

### Holoparamesus, Curt.

- depressus, Curt. *Sunderland* (Bold)

### Lathridius, Hbst.

- lardarius, De G. (Bold, Bagnall)
- bergrothi, Reit. Common in cellars of *Winlaton* (Bagnall)

### Coninomus, Th.

- nodifer, West. (Bold, Bagnall)

### Enicmus, Th.

- transversus, Ol. (Bold, Bagnall)
- brevicornis, Man. (Bold, Bagnall)

### Corticaria, Marsh.

- pubescens, Gyll. (Bold, Bagnall)
- crenulata, Gyll. (Bold, Bagnall)
- denticullata, Gyl. (Bold, Bagnall)
- serrata, Pk. (Bold)
- umbilicata, Beck. Sea banks (Bold)
- fulva, Com. (Bold, Bagnall)
- elongata, Gyll. (Bagnall)
- fenestralis, L. (Bold)



# INSECTS

## Melanophthalma, Mots.

- gibbosa, Hbst. (Bold)
- fuscula, Hum. (Bold, Bagnall)

## CUCUJIDÆ

### Læmophlœus, Er.

- ferrugineus, Steph. Imported in grain (Bold, Gardner)

### Nausibius, Redt.

- dentatus, Marsh. Imported (Bold)

### Silvanus, Lat.

- surinamensis, L. (Bold)

## BYTURIDÆ

### Byturus, Lat.

- sambuci, Scop. Not frequent (Bold)
- tomentosus, F. (Bold, Bagnall, Gardner)

## CRYPTOPHAGIDÆ

### Antherophagus, Lat.

- nigricornis, F. (Bold)
- pallens, Ol. (Bold, Bagnall)

### Cryptophagus, Hbst.

- setulosus, Stm. (Bold, Bagnall, Gardner)
- pilosus, Gyll. (Bold, Bagnall, Gardner)
- punctipennis, Bris. *South Shields* (Bold)
- saginatus, Stm. (Bold)
- umbratus, Er. (Bold)
- scanicus, L. (Bold, Bagnall, Gardner)

- badius, Stm. Rare (Bold)
- validus, Kr. *South Shields* (Bold)

- dentatus, Hbst. (Bold, Bagnall, Gardner)

- distinguendus, Stm. Rare (Bold)

- acutangulus, Gyll. (Bold, Gardner)

- fumatus, Gyll. Very rare (Bold)

- cellaris, Scop. (Bold, Bagnall)

- affinis, Stm. (Bold, Gardner)

- pubescens, Stm. *Winlaton Mill* (Bagnall)

### Micrambe, Th.

- vini, Pz. (Bold)

### Henoticus, Th.

- serratus, Gyll. *Washington*, very rare (Bold)

### Paramecosoma, Curt.

- melanocephalum, Hbst. (Bagnall)

### Atomaria, Steph.

- fumata, Er. (Bold)
- nigriventris, Steph. (Bold)

## Automaria, Steph.

- umbrina, Gyll. Very rare (Bold)

- fuscipes, Gyll. (Bold)

- nigripennis, Pk. (Bold)

- fuscata, Sch. (Bold)

- pusilla, Pk. (Bold)

- atricapilla, Steph. (Bold)

- berolinensis, Kr. (Bold, Gardner)

- apicalis, Er. (Bold)

- analis, Er. (Bold)

### Ephistemus, West.

- gyρινoides, Marsh. (Bold)

## SCAPHIDIIDÆ

### Scaphidium, Ol.

- quadrimaculatum, Ol. *Gibside* (Handcock and Taylor), *Winlaton Mill* (Bagnall)

### Scaphisoma, Leach.

- agaricinum, L. (Bold)

## MYCETOPHAGIDÆ

### Typhæa, Curt.

- fumata, L. (Bold, Bagnall, Gardner)

### Triphyllus, Lat.

- suturalis, F. (Bold)

### Mycetophagus, Hell.

- quadripustulatus, L. *Teesdale* (Gardner)

## DERMESTIDÆ

### Dermestes, L.

- vulpinus, F. (Bold)

- frischii, Kug. *South Shields* (Bold)

- murinus, L. (Bold)

- lardarius, L. (Bold, Bagnall)

### Attagenus, Lat.

- pello, L. (Bold)

### Florilinus, Muls.

- musæorum, L. *Gibside* (Wailes)

## BYRRHIDÆ

### Byrrhus, L.

- pilula, L. (Bold, Bagnall, Gardner)

- fasciatus, F. (Bold, Gardner)

- dorsalis, F. (Bold)

### Cytillus, Er.

- varius, F. (Bold, Bagnall, Gardner)

### Simplocaria, Marsh.

- semistriata, F. (Bold, Bagnall, Gardner)

### Aspidiphorus, Lat.

- orbiculatus, Gyll. Rare (Bold)

## GEORYSSIDÆ

### Georyssus, Lat.

- pygmæus, F. (Bold)

## PARNIDÆ

### Elmis, Lat.

- æneus, Müll. (Bold, Bagnall, Gardner)

- volkmari, Pz. (Bold, Gardner)

- cupreus, Müll. *Hesleden* (Gardner)

- nitens, Müll. *Hesleden* (Gardner)

### Limnius, Müll.

- tuberculatus, Müll. (Bold, Bagnall, Gardner)

### Parnus, F.

- prolifericornis, F. (Bold, Bagnall, Gardner)

- auriculatus, Pz. (Bold, Bagnall, Gardner)

## HETEROCERIDÆ

### Heterocerus, F.

- marginatus, F. (Bold, Gardner)

## LUCANIDÆ

### Lucanus, L.

- cervus, L. *Sunderland*, introduced (Bagnall)

### Sinodendron, F.

- cylindricum, L. (Bold, Robson, Bagnall, Gardner)

## SCARABÆIDÆ

### Onthophagus, Lat.

- nuchicornis, L. Very rare. *South Shields* (Bold)

### Aphodius, Ill.

- erraticus, L. (Bold, Gardner)

- subterraneus, L. (Bold, Gardner)

- fossor, L. (Bold, Robson, Bagnall, Gardner)

- hæmorrhoidalis, L. (Bold, Gardner)

- fœtens, F. (Bold)

- fimetarius, L. (Bold, Robson, Bagnall, Gardner)

- scybalarius, F. (Bold, Gardner)

- ater, De G. (Bold, Bagnall, Gardner)

- granarius, L. Rare. *South Shields* (Bold), *Hartlepool* (Gardner)

- sordidus, F. (Bold, Bagnall)

- rufescens, F. (Bold, Gardner)

- lapponum, Gyll. (Bold, Gardner)

- fœtidus, F. (Bold, Gardner)

- borealis, Gyll. (Bold)

# A HISTORY OF DURHAM

## Aphodius, Ill.

- pusillus, Hbst. (Bold, Bagnall)
- merdarius, F. (Bold, Bagnall, Gardner)
- inquinatus, F. (Bold, Bagnall, Gardner)
- tessellatus, Pk. *Hartlepool* (Gardner)
- conspurcatus, L. (Bold, Bagnall, Gardner)
- punctato-sulcatus, Stm. (Bold, Bagnall, Gardner)
- prodromus, Brahm. (Bagnall, Gardner)
- contaminatus, Hbst. (Bold, Bagnall, Gardner)
- luridus, F. (Bold, Gardner)
- rufipes, L. (Bold, Gardner)
- depressus, Kug. (Bold, Bagnall, Gardner)

## Ægialia, Lat.

- sabuleti, Pk. (Bold, Bagnall)
- arenaria, F. (Bold, Bagnall, Gardner)

## Geotrupes, Lat.

- stercorarius, L. (Bold, Robson, Bagnall, Gardner)
- sylvaticus, Pz. (Bold, Bagnall, Gardner)
- vernalis, L. (Bagnall, Gardner)

## Serica, McL.

- brunnea, L. (Bold, Bagnall, Gardner)

## Melolontha, F.

- vulgaris, F. (Bold, Robson, Bagnall, Gardner)
- hippocastani, F. (Bagnall)

## Phyllopertha, Kirk.

- horticola, L. (Bold, Bagnall)

## Anomala, Sam.

- frischeri, F. (Bold, Bagnall, Gardner)

## ELATERIDÆ

### Lacon, Lap.

- murinus, L. (Bold, Gardner)
- Cryptohypnus, Esch.
- maritimus, Curt. Rare (Bold)
- riparius, F. (Bold, Bagnall, Gardner)
- dermestoides, Hbst. (Bold)

### Elatér, L.

- balteatus, L. Not common (Bold)

### Melanotus, Esch.

- rufipes, Hbst. (Bold, Gardner)

### Athous, Esch.

- niger, L. (Bold, Bagnall)
- longicollis, Ol. (Bold, Bagnall)
- hæmorrhoidalis, F. (Bold, Robson, Gardner)
- vittatus, F. (Bold)

## Limonius, Esch.

- cylindricus, Pk. (Bold, Bagnall, Gardner)
- minutus, L. (Bold, Bagnall, Gardner)

## Adrastus, Esch.

- limbatus, F. (Bold, Bagnall, Gardner)

## Agriotes, Esch.

- sputator, L. (Bold, Bagnall, Gardner)
- obscurus, L. (Bold, Bagnall, Gardner)
- lineatus, L. (Bold, Bagnall, Gardner)
- sobrinus, Kies. (Bagnall, Gardner)
- pallidulus, Ill. (Bold, Bagnall, Gardner)

## Dolopius, Esch.

- marginatus, L. (Bold, Bagnall, Gardner)

## Corymbites, Lat.

- castaneus, L. Rare. On the coast near *Hawthorne Dene* (Kirwood)
- pectinicornis, L. (Bold, Bagnall, Gardner)
- cupreus, F. (Bold, Robson, Bagnall, Gardner)
- v. æruginosus, F. Not so common as type (Bagnall)

## Corymbites, Lat.

- tessellatus, F. Not common (Bold)
- quercus, Gyll. (Bold, Bagnall, Gardner)
- holosericeus, F. (Bold, Bagnall)

## Campylus, Fisch.

- linearis, L. (Bold, Bagnall, Gardner)

## DASCILLIDÆ

### Dascillus, Lat.

- cervinus, L. (Bold, Bagnall, Gardner)

### Helodes, Lat.

- minuta, L. (Bold, Bagnall)
- marginata, F. (Bold, Bagnall, Gardner)

### Microcara, Th.

- livida, F. (Bold, Bagnall ?)

### Cyphon, Pk.

- coarctatus, Pk. (Bold, Bagnall, Gardner)
- nitidulus, Th. (Bold, Bagnall)
- variabilis, Thunb. (Bold, Bagnall, Gardner)

### — padi, L. (Bold, Bagnall)

### Hydrocyphon, Redt.

- deflexicollis, Müll. Rare (Bold)

### Eubria, Germ.

- palustris, Germ. Near *Castle Eden Dene* (Bold)

## LAMPYRIDÆ

### Lampyrus, L.

- noctiluca, L. (Bold, Bagnall)

## TELEPHORIDÆ

### Podabrus, West.

- alpinus, Pk. (Bold, Bagnall)
- Ancistrionycha, Märk.
- abdominalis, F. (Bold) *Teesdale* (Harris and Blatch), (Bagnall)

### Telephorus, Schæf.

- rusticus, Fall. (Bold, Bagnall, Gardner)
- lividus, L. (Bold, Bagnall, Gardner)
- pellucidus, F. (Bold, Bagnall, Gardner)
- nigricans, Müll. (Bold, Bagnall)

- lituratus, Fall. (Bold, Bagnall, Gardner)

- figuratus, Man. (Bold, Bagnall ?, Gardner)

- bicolor, F. (Bold, Bagnall, Gardner)

- hæmorrhoidalis, F. (Bold, Bagnall, Gardner)

- flavilabris, Fall. (Bold, Bagnall, Gardner)

### Rhagonycha, Esch.

- unicolor, Curt. (Bold)
- fulva, Scop. (Bold, Bagnall, Gardner)

- testacea, L. (Bagnall ?, Gardner)

- limbata, Th. (Bold, Bagnall)

- pallida, F. (Bold, Bagnall, Gardner)

- elongata, Fall. (Bold)

### Malthinus, Lat.

- punctatus, Fourc. (Bold, Bagnall)

- frontalis, Marsh. Rare. *Winlaton Mill* (Bagnall)

### Malthodes, Kies.

- marginatus, Lat. (Bold, Bagnall, Gardner)

- mysticus, Kies. (Bold)

- pellucidus, Kies. Not common. *Gibside* (Bold)

- minimus, L. (Bold, Bagnall)

- atomus, Th. Rare (Bold)

### Malachius, F.

- æneus, L. Rare. *Stockton* (Hogg's Stockton) ?

- bipustulatus, L. (Bold, Bagnall)

### Dasytes, Pk.

- ærosus, Kies. Rare. (Bold)

### Psilothrix, Redt.

- nobilis, Ill. Has been recorded from *Durham* (Bungey), but is probably an error

# INSECTS

*Phlæophilus*, Steph.

— *edwardsi*, Steph. Rare (Bold)

## CLERIDÆ

*Tillus*, Ol.

— *elongatus*, L. *Durham* (Ornsby's *Durham*) ?

*Thanasimus*, Lat.

— *formicarius*, L. (Bold, Bagnall, Johnson, Gardner)

*Necrobia*, Lat.

— *ruficollis*, F. (Bold, Bagnall)

— *violacea*, L. (Bold, Bagnall)

— *rufipes*, De G. (Bold)

— *quadra*, *South Shields*, introduced (Bold)

## PTINIDÆ

*Ptinus*, L.

— *fur*, L. (Bold, Bagnall, Gardner)

*Niptus*, Boiel.

— *hololeucus*, Fall. (Bold, Robson, Bagnall, Gardner)

— *crenatus*, F. (Bold, Bagnall)

*Gibbium*, Scop.

— *scotias*, F. (Bold, Robson, Gardner)

## ANOBIIDÆ

*Priobium*, Mots.

— *castaneum*, F. (Bold)

*Anobium*, F.

— *domesticum*, Fourc. (Bold, Robson, Bagnall, Gardner)

— *paniceum*, L. (Bold, Bagnall) Introduced

*Ernobius*, Th.

— *mollis*, L. (Bold)

*Ptilinus*, Geof.

— *pectinicornis*, L. (Bold, Bagnall)

## BOSTRICHIDÆ

*Rhizopertha*, Steph.

— *pusilla*, F. (Bold, Bagnall, Gardner)

## LYCTIDÆ

*Lyctus*, F.

— *canaliculatus*, F. Rare (Bold)

## CISSIDÆ

*Cis*, Lat.

— *boleti*, Scop. (Bold, Bagnall, Gardner)

— *bidentatus*, Ol. (Bold, Bagnall, Gardner)

— *nitidus*, Hbst. *Teesdale* (Gardner)

— *festivus*, Pz. *Ravensworth* (Bold)

*Octotemnus*, Mel.

— *glabriculus*, Gyll. (Bold, Bagnall, Gardner)

## CERAMBYCIDÆ

*Tetropium*, Kirb.

— *castaneum*, L., black form (Gardner)

*Callidium*, F.

— *violaceum*, L. *Hartlepool* (Gardner), probably imported

— *variabile*, L. *Hartlepool* (Gardner), probably imported

— *alni*, L. *Gibside* (Wailes)

*Clytus*, Laich.

— *arcuatus*, L. (Bold). *Hartlepool* (Gardner)

— *arietis*, L. (Bold, Bagnall, Gardner)

*Gracilia*, Serv.

— *minuta*, F. *Sunderland* (Peacock), *Hartlepool* (Gardner)

*Molorchus*, F.

— *minor*, L. *Hartlepool* (Gardner)

*Rhagium*, F.

— *inquisitor*, F. (Bold, Bagnall, Gardner)

— *bifasciatum*, F. (Bold, Bagnall, Gardner)

*Toxotus*, Ser.

— *meridianus*, L. Red variety once at *Lockhaugh* (Bagnall) (Gardner)

*Pachyta*, Ser.

— *cerambyciformis*, Schr. (Bold, Bagnall)

*Strangalia*, Ser.

— *quadrifasciata*, L. (Bold, Bagnall)

— *armata*, Hbst. (Bold, Bagnall)

— *melanura*, L. (Bold, Bagnall)

*Grammoptera*, Ser.

— *tabacicolor*, De G. (Bold, Bagnall)

— *ruficornis*, F. (Bold, Bagnall)

## LAMIIDÆ

*Acanthocinus*, Steph.

— *ædilis*, L. (Bold, Robson, Johnson, Gardner)

*Leiopus*, Ser.

— *nebulosus*, L. (Bold, Robson, Bagnall)

*Pogonochærus*, Lat.

— *fasciculatus*, De G. *Hartlepool*, common (Gardner)

— *bidentatus*, Th. (Bold). *Winlaton Mill*, under bark (Bagnall); *Hartlepool* (Gardner)

— *dentatus*, Fourc. *Hartlepool*, very rare (Gardner)

*Monohammus*, Muls.

— *sartor*, F. *Sunderland*, introduced (Corder); *Hartlepool* (Gardner)

*Monohammus*, Muls.

— *sutor*, L. *Burnopfield*, introduced (Johnson); *Hartlepool*, shipyards (Gardner)

*Saperda*, F.

— *scalaris*, L. *Langley*, pasture (Ornsby's *Durham*), rare; *Hartlepool* (Gardner)

*Tetrops*, Steph.

— *præusta*, L. *Gibside* (Wailes)

*Stenostola*, Muls.

— *ferrea*, Schr. *Gibside* (Hardy), *Derwent Valley* (Bagnall)

## BRUCHIDÆ

*Bruchus*, L.

— *pisi*, L. In pea introduced (Bagnall)

— *rufimanus*, Boh. Introduced (Bold, Gardner)

## CHRYSOMELIDÆ

*Donacia*, F.

— *versicolora*, Brahm. (Bold, Bagnall)

— *simplex*, F. (Bold)

— *vulgaris*, Zsch. (Bold)

— *sericea*, L. (Bold, Bagnall)

— *discolor*, Pz. (Bold)

*Hæmonia*, Curt.

— *curtisi*, Lac. *Greatham* (Gardner)

*Lema*, F.

— *cyanella*, L. (Bold)

— *lichenis*, Vœt. *Gibside* (Bagnall)

— *melanopa*, L. (Bold)

*Clythra*, Laich.

— *quadrupunctata*, L. (Bold,

*Cryptocephalus*, Geof.

— *bipunctatus*, L.; v. *lincola*, F. *Castle Eden Dene* (Ornsby's *Durham*)

— *aureolus*, Suf. Not common (Bold)

— *hypochæridis*, L. *Marsden* (Handcock)

— *moræi*, L. *Castle Eden Dene* (Wailes)

— *fulvus*, Gæz. One specimen, near *Winlaton* (Bagnall)

— *labiatus*, L. (Bold, Bagnall)

*Chrysomela*, L.

— *marginata*, L. (Bold)

— *staphylea*, L. (Bold, Bagnall, Gardner)

— *polita*, L. (Bold, Robson, Bagnall, Gardner)

— *orichalcia*, Müll. (Bold, Bagnall)

v. *hobsoni*, Steph. *South Hylton*, very rare and local (Bagnall)

— *hæmoptera*, L. (Bold)

— *varians*, Schal. (Bold, Gardner)



# A HISTORY OF DURHAM

*Chrysomela*, L.  
 — *fastuosa*, Scop. (Bold)  
 — *didymata*, Scrib. (Bold, Gardner)  
 — *hyperici*, Först. (Bold, Gardner)  
*Melasoma*, Steph.  
 — *æneum*, L. *Durham* (Ornsby's *Durham*), *Sharnberry Gill*, not uncommon on alders (Gardner)  
*Phytodecta*, Kirb.  
 — *viminalis*, L. *Durham* (Ornsby's *Durham*)  
 — *olivacea*, Först. (Bold)  
 — *pallida*, L. (Bold)  
*Gastroidea*, Hope.  
 — *viridula*, De G. (Bold)  
 — *polygoni*, L. (Bold) *Winlaton* (Bagnall, Gardner)  
 — *tenella*, L. (Bold, Gardner)  
*Adimonia*, Laich.  
 — *tanacetii*, L. (Bold, Gardner)  
*Sermyla*, Chap.  
 — *halensis*, L. (Bold, Gardner). Also greenish purple variety  
*Longitarsus*, Lat.  
 — *luridus*, Scop. Near *Swallow* (Bagnall)  
 — *brunneus*, Duft. (Bold, Bagnall)  
*Longitarsus*, Lat.  
 — *suturellus*, Duft. v. *fusci-collis*, Steph. (Bold, Bagnall)  
 — *atricillus*, L. (Bold, Bagnall)  
 — *melanocephalus*, De G. (Bold, Bagnall)  
 — *suturalis*, Mars. Rare (Bold)  
 — *femoralis*, Marsh. Not common (Bold, Bagnall)  
 — *pusillus*, Gyll. (Bold)  
 — *jacobææ*, Wat. (Bold, Bagnall)  
 — *ochroleucus*, Marsh. Sparingly on the coast (Bold)  
 — *lævis*, Duft. (Bold)  
*Haltica*, Geof.  
 — *ericeti*, Al. (Bold, Bagnall, Gardner)  
 — *pusilla*, Duft. (Bagnall, Gardner)  
*Phyllotreta*, Foud.  
 — *undulata*, Kuts. This is the Turnip Fly of this district. (Bold, Bagnall, Gardner)  
 — *memorum*, L. Rare (Bold, Gardner)  
 — *tetrastigma*, Com. (Bold)  
 — *exclamationis*, Thunb. (Bold)  
*Aphthona*, Chev.  
 — *atrocyanea*, Steph. *Hartlepool* (Hurdy)  
*Batophila*, Foud.  
 — *rufa*, Pk. (Bold, Bagnall)

*Sphæroderma*, Steph.  
 — *testacea*, F. (Bold, Bagnall, Gardner)  
 — *cardui*, Gyll. (Bold, Bagnall, Gardner)  
*Apteropeda*, Redt.  
 — *orbiculata*, Marsh. (Bold)  
*Mniophila*, Steph.  
 — *muscorum*, Koch. (Bold)  
*Mantura*, Steph.  
 — *rustica*, L. (Bold, Bagnall)  
*Crepidodera*, Chev.  
 — *transversa*, Marsh. (Bold, Bagnall, Gardner)  
 — *ferruginea*, Scop. (Bold, Bagnall, Gardner)  
 — *rufipes*, L. (Bold, Bagnall, Gardner)  
 — *helxines*, L. (Bold, Gardner)  
 — *aurata*, Marsh. (Bold, Bagnall)  
*Hippuriphila*, Foud.  
 — *modeeri*, L. (Bold, Bagnall)  
*Plectroscelis*, Redt.  
 — *concinna*, Marsh. (Bold, Bagnall)  
*Psylliodes*, Lat.  
 — *chrysocephala*, L. (Bold, Bagnall)  
 — *napi*, Koch. (Bold, Bagnall)  
 — *cuprea*, Koch. Coast (Bold)  
 — *affinis*, Pk. (Bold)  
 — *marcida*, Ill. Coast (Bold)  
 — *picina*, Marsh. Rare (Bold)  
*Cassida*, L.  
 — *sanguinolenta*, F. Very rare (Bold)  
 — *flaveola*, Thunb. Not common (Bold)  
 — *viridis*, L. (Bold, Bagnall, Gardner)

## TENEBRIONIDÆ

*Blaps*, F.  
 — *mucronata*, Lat. (Bold, Bagnall, Gardner)  
*Scaphidema*, Redt.  
 — *metallicum*, F. (Bold, Gardner, Bagnall)  
*Tenebrio*, L.  
 — *molitor*, L. (Bold, Bagnall, Corder)  
 — *obscurus*, F. (Bold)  
*Alphitobius*, Steph.  
 — *diaperinus*, Pz. In shops, imported, and in deep hot coalmines (Bold)  
 — *piceus*, Ol. In grain warehouses, *Hartlepool* (Gardner)  
*Gnathocerus*, Thunb.  
 — *cornutus*, F. In bakehouses (Bold)

*Tribolium*, McL.  
 — *ferrugineum*, F. Imported in sugar (Bold). *Hartlepool* (Gardner)  
*Palorus*, Duv.  
 — *ratzeburgi*, Wiss. In shops. Introduced. (Bold)  
*Helops*, F.  
 — *striatus*, Fourc. *Gibside* (Handcock); *Lockhaugh*, one specimen in grass (Bagnall)

## LAGRIIDÆ

*Lagria*, F.  
 — *hirta*, L. (Bold, Gardner)

## CISTELIDÆ

*Cistela*, F.  
 — *murina*, L. *Winlaton Mill* (Bagnall), *Hartlepool* (Gardner)

## MELANDRYIDÆ

*Tetratoma*, F.  
 — *fungorum*, F. *Teesdale* (Gardner)  
 — *ancora*, F. (? Wailes)  
*Orchesia*, Lat.  
 — *micans*, Pz. (Bagnall, Gardner)  
*Clinocara*, Th.  
 — *tetratoma*, Th. *Swallow* (Bold)  
 — *undulata*, Kr. Very local, often in numbers (Bagnall)  
*Melandrya*, F.  
 — *caraboides*, L. (Bold, Bagnall)  
 — *flexuosa*, Pk. *Teesdale* (Gardner)

## PYTHIDÆ

*Salpingus*, Gyll.  
 — *castaneus*, Pz. (Bold, Bagnall, Gardner)  
 — *ætatus*, Muls. (? Gardner)  
 — *ater*, Pk. (Bold)  
*Rhinosisimus*, Lat.  
 — *ruficollis*, L. (Bold, Bagnall, Gardner)  
 — *viridipennis*, Steph. (Bold, Bagnall)  
 — *planirostris*, F. (Bold, Bagnall, Gardner)

## CEDEMERIDÆ

*Cedemera*, Ol.  
 — *lurida*, Marsh. *Durham* (Ornsby's *Durham*)

# INSECTS

*Nacerdes*, Schm.

- *melanura*, L. *Sunderland and South Shields* (Bold). Very abundant on Quayside, *Hartlepool* (Gardner)

## PYROCHROIDÆ

*Pyrochroa*, Geof.

- *serraticornis*, Scop. (Bold, Gardner)

## MORDELLIDÆ

*Anaspis*, Geof.

- *frontalis*, L. (Bold, Bagnall, Gardner)
- *pulicaria*, Costa. Very rare (Bold)
- *rufulabris*, Gyll.
- *geoffroyi*, Müll. Rare (Bold)
- *rufigollis*, F. (Bold, Bagnall)
- *costæ*, Emery. Rare (Bold)
- *subtestacea*, Steph. (Bold)
- *maculata*, Fourc. (Bold, Bagnall)

## RHIPIDOPHORIDÆ

*Metæcus*, Gers.

- *paradoxus*, L. Not common (Bold) *Lockhaugh*. Very rare (Bagnall), *Castle Eden Dene* (Trechmann)

## ANTHICIDÆ

*Anthicus*, Pk.

- *floralis*, L. (Bold, Robson, Bagnall, Gardner)

## MELOIDÆ

*Meloe*, L.

- *proscarabæus*, L. (Bold, Bagnall)
- *violaceus*, Marsh. *Blanchland Moor* (Bagnall), *Teesdale* (Gardner)

## ANTHRIBIDÆ

*Macrocephalus*, Ol.

- *albinus*, L. *Gibside*, of old, not lately (Bold, Corder)

## CURCULIONIDÆ

*Apoderus*, Ol.

- *coryli*, L. *Castle Eden Dene* (Ornsby's Durham)

*Attelabus*, L.

- *curculionoides*, L. *Winlaton Mill*, on hazel; *Lockhaugh*, etc. (Bagnall)

*Byctiscus*, Th.

- *betuleti*, F. (Bold, Bagnall) *Teesdale* (Gardner)

*Rhynchites*, Schn.

- *æneovirens*, Marsh. *Winlaton Mill* (Bagnall)
- *cæruleus*, De G. Rare (Bold)
- *minutus*, Hbst. (Bold, Bagnall)
- *pauxillus*, Germ. Very rare (Bold)
- *nanus*, Pk. Not common (Bold, Bagnall)
- *uncinatus*, Th. Rather rare (Bold)

*Deporaus*, Leach.

- *megacephalus*, Germ. *Durham* (Ornsby's Durham)

*Apion*, Hbst.

- *craccæ*, L. *Swalwell* (Hardy)
- *cerdo*, Gers. *Gibside* (Bold)
- *subulatum*, Kirb. (Bold)
- *ulicis*, Först. (Bold)
- *cruentatum*, Walt. (Bold)
- *hæmatodes*, Kirb. (Bold)
- *pallipes*, Kirb. Very rare. (Bold) *Hartlepool* (Gardner)
- *rufirostre*, F. Very rare (Bold)
- *vicæ*, Pk. (Bold)
- *varipes*, Germ. Very rare (Bold)
- *apricans*, Hbst. (Bold, Bagnall, Gardner)
- *assimile*, Kirb. (Bold, Gardner)
- *trifolii*, L. Rare (Bold)
- *dichroum*, Bed. (Bold, Bagnall, Gardner)
- *nigritarse*, Kirb. (Bold)
- *sorbi*, F. Very rare (Bold)
- *æneum*, F. (Bold)
- *radiolus*, Kirb. (Bold)
- *onopordi*, Kirb. (Bold, Gardner)
- *carduorum*, Kirb. (Bold, Bagnall, Gardner)
- *virens*, Hbst. (Bold, Gardner)
- *punctigerum*, Pk. (Bold)
- *pisi*, F. (Bold, Bagnall)
- *æthiops*, Hbst. (Bold, Gardner)
- *striatum*, Kirb. (Bold)
- *immune*, Kirb. (Bold)
- *ononis*, Kirb. (Bold, Gardner)
- *spencei*, Kirb. (Bold)
- *ervi*, Kirb. (Bold)

*Apion*, Hbst.

- *vorax*, Hbst. (Bold, Gardner)
- *gyllenhali*, Kirb. Very rare (Bold)
- *unicolor*, Kirb. (Bold)
- *loti*, Kirb. (Bold, Gardner)
- *seniculum*, Kirb. (Bold)
- *marchicum*, Hbst. Rare (Bold, Bagnall, Gardner)
- *affine*, Kirb. (Bold, Bagnall)

*Apion*, Hbst.

- *violaceum*, Kirb. (Bold, Bagnall, Gardner)
  - *humile*, Germ. (Bold, Bagnall, Gardner)
- Otiorhynchus*, Germ.
- *atroapterus*, De G. (Bold) *Hartlepool* (Gardner)
  - *maurus*, Gyll. (Corder)
  - *raucus*, F. *Hartlepool* (Gardner)
  - *ligneus*, Ol. (Bold, Bagnall, Gardner)
  - *picipes*, F. (Bold, Bagnall, Gardner)
  - *sulcatus*, F. *Winlaton* (Bagnall)
  - *ligustici*, L. *Hartlepool*, rare (Gardner)
  - *rugifrons*, Gyll. (Bold, Corder, Gardner)
  - *ovatus*, L. (Bold, Bagnall, Gardner)
  - *muscorum*, Bris. (Bold, Gardner)
- Trachypylæus*, Germ.
- *aristatus*, Gyll. *Hartlepool* (Gardner)
  - *scaber*, L. (Bold, Gardner, Bagnall)
  - *scabriculus*, L. (Hardy, Gardner)
- Strophosomus*, Sch.
- *coryli*, F. (Bold, Bagnall, Gardner)
  - *capitatus*, De G. (Bold, Bagnall, Gardner)
  - *retusus*, Marsh. (Bold)
  - *faber*, Hbst. (Bold, Bagnall)
  - *lateralis*, Pk. (Bold, Bagnall, Gardner)
- Omiæ*, Sch.
- *mollinus*, Boh. Near *Swalwell* (Hardy), *Hartlepool* (Gardner)
- Brachysomus*, Steph.
- *echinatus*, Bons. (Bold, Gardner)
- Sciaphilus*, Steph.
- *muricatus*, F. (Bold, Bagnall)
- Tropiphorus*, Sch.
- *tomentosus*, Marsh. (Bold, Bagnall, Gardner)
- Liophylæus*, Germ.
- *nubilus*, F. (Bagnall, Gardner)
- Polydrusus*, Germ.
- *micans*, F. (Bold, Gardner)
  - *tereticollis*, De G. (Bold, Gardner)
  - *pterygomalis*, Sch. (Bold, Bagnall)
  - *cervinus*, L. (Bold, Bagnall, Gardner)
- Phyllobius*, Sch.
- *oblongus*, L. (Bold, Bagnall, Gardner)

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- Phyllobius*, Sch.  
— *calcaratus*, F. (Bold, Bagnall)  
— *urticæ*, De G. (Bold, Robson, Bagnall, Gardner)  
— *pyri*, L. (Bold, Bagnall, Gardner)  
— *argentatus*, L. (Bold, Bagnall, Gardner)  
— *maculicornis*, Germ. (Bold, Gardner)  
— *pomonæ*, Ol. (Bold, Gardner)  
— *viridiæris*, Laich. (Bold, Robson, Bagnall, Gardner)  
— *viridicollis*, F. (Bold, Bagnall, Gardner)  
*Tanymecus*, Sch.  
— *palliatu*, F. (Bold). *Great-ham*, one specimen (Gardner)  
*Philopodon*, Steph.  
— *geminatus*, F. (Bold, Bagnall, Gardner)  
*Atactogenus*, Tourn.  
— *exaratus*, Marsh. (Bold)  
*Barynotus*, Germ.  
— *obscurus*, F. (Bold, Bagnall, Gardner)  
— *schönherri*, Zett. (Bold, Bagnall, Gardner)  
— *elevatus*, Marsh. (Bold, Bagnall, Gardner)  
*Alophus*, Sch.  
— *triguttatus*, F. (Bold)  
*Sitones*, Sch.  
— *griseus*, F. (Bold, Bagnall, Gardner)  
— *regensteiniensis*, Hbst. (Bold, Bagnall)  
— *lineellus*, Gyll. *Hartlepool* (Blatch, Gardner)  
— *tibialis*, Hbst. (Bold, Gardner)  
— *hispidulus*, F. (Bold, Gardner)  
— *humeralis*, Steph. (Bold, Gardner)  
— *meliloti*, Walt. Rare, *South Shields* (Bold)  
— *flavescens*, Marsh. (Bold)  
— *puncticollis*, Steph. (Bold, Gardner)  
— *suturalis*, Steph. (Bold, Gardner)  
— *lineatus*, L. (Bold, Bagnall, Gardner)  
— *sulcifrons*, Thunb. (Bold, Gardner)  
*Limobius*, Sch.  
— *dissimilis*, Hbst. Not common (Bold). *Hartlepool*, at the roots of *Geranium sanguineum* (Gardner)  
*Hypera*, Germ.  
— *punctata*, F. (Bold, Bagnall, Gardner)  
— *fasciculata*, Hbst. *Hartlepool* (Gardner)  
*Hypera*, Germ.  
— *rumicis*, L. (Bold)  
— *polygoni*, L. (Bold, Gardner)  
— *suspiciosa*, Hbst. (Bold, Bagnall)  
— *variabilis*, Hbst. (Bold)  
— *plantaginis*, De G. (Bold)  
— *trilineata*, Marsh. Not frequent (Bold). *Birtley*, plentiful (Robson, Gardner)  
— *nigrirostris*, F. (Bold, Bagnall, Gardner)  
*Cleonus*, Sch.  
— *sulcirostris*, L. (Bold). Common (Gardner)  
*Liosoma*, Steph.  
— *ovatum*, Clair. (Bold, Gardner)  
*Curculio*, L.  
— *abietis*, L. (Bold, Bagnall, Gardner)  
*Pissodes*, Germ.  
— *pini*, L. (Bold, Bagnall, Gardner)  
— *notatus*, F. *Sunderland*, probably introduced in Scotch timber ships (Kirwood)  
— *gyllenhali*, Schön. Found by a miner in a colliery woodyard, who exhibited it as 'The Norway Wood Louse' (Bold)  
— *piniphilus*, Hbst. *Sunderland*, imported in timber ships; (Bold). *Hartlepool* (Gardner)  
*Orchestes*, Ill.  
— *quercus*, L. (Bold, Bagnall, Gardner)  
— *scutellaris*, Gyll. (Bold, Bagnall)  
— *fagi*, L. (Bold, Bagnall, Gardner)  
— *rusci*, Hbst. (Bold)  
— *stigma*, Germ. (Bold, Bagnall)  
— *salicis*, L. (Bold, Bagnall, Gardner)  
— *saliceti*, F. (Bold, Bagnall)  
*Rhamphus*, Clair.  
— *flavicornis*, Clair. (Bold, Bagnall)  
*Orthochaetes*, Germ.  
— *setiger*, Beck. *Durham* (Bold)  
*Grypidius*, Steph.  
— *equiseti*, F. (Bold, Bagnall, Gardner)  
*Eirrhinus*, Sch.  
— *bimaculatus*, F. *Greatham*, one specimen (Gardner)  
— *acridulus*, L. (Bold, Bagnall)  
*Dorytomus*, Steph.  
— *vorax*, F. Rare (Bold, Gardner)  
— *tortrix*, L. *Durham* (Bold, Bagnall)  
*Dorytomus*, Steph.  
— *hirtipennis*, Bed. *Castle Eden Dene* (Ornsby's Durham)  
— *validirostris*, Gyll. (Bagnall, Gardner)  
— *maculatus*, Marsh. (Bold, Bagnall, Gardner)  
— *melanophthalmus*, Pk. v. *agnathus*, Boh. *Axwell Park* (Bold)  
— *pectoralis*, Gyll. (Bold, Bagnall)  
— *majalis*, Pk. *Castle Eden Dene* (Bold)  
*Bagous*, Sch.  
— *alismatis*, Marsh. (Bold)  
*Anoplus*, Sch.  
— *plantaris*, Næz. (Bold)  
*Miccotrogus*, Sch.  
— *picrostris*, F. Very rare. *Marsden*. (Hardy)  
*Gymnetron*, Sch.  
— *beccabungæ*, L. Not abundant (Bold)  
— *labilis*, Hbst. (Bold)  
*Mecinus*, Germ.  
— *pyraster*, Hbst. (Bold, Gardner)  
*Anthonomus*, Germ.  
— *ulmi*, De G. (Bold, Bagnall)  
— *pedicularius*, L. (Bold, Bagnall)  
— *pomorum*, L. (Bold, Bagnall)  
— *rubi*, Hbst. (Bold)  
— *comari*, Crotch. (Bold)  
*Cionus*, Clair.  
— *scrophulariæ*, L. (Bold, Robson, Bagnall, Gardner)  
— *blattariæ*, F. *Durham* (Ornsby's Durham)  
— *pulchellus*, Hbst. (Bold, Robson, Bagnall, Gardner)  
*Orobitis*, Germ.  
— *cyaneus*, L. Not common (Bold)  
*Cryptorhynchus*, Ill.  
— *lapathi*, L. (Bold)  
*Acalles*, Steph.  
— *ptinoides*, Marsh. *Gibside*, very rare. (Bold)  
*Cæliodes*, Sch.  
— *rubicundus*, Hbst. (Bold, Bagnall, Gardner)  
— *quercus*, F. (Bold, Bagnall)  
— *ruber*, Marsh. (Bold, Bagnall)  
— *cardui*, Hbst. (Bold, Gardner)  
— *quadrifasciatus*, L. (Bold, Bagnall, Gardner)  
— *geranii*, Pk. (Hardy, Bagnall, Gardner)  
— *exiguus*, Ol. (Bold)  
*Poophagus*, Sch.  
— *sisymbrii*, F. (Bold)



## INSECTS

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| <p><i>Ceuthorhynchus</i>, Duv.<br/> — <i>assimilis</i>, Pk. (Bold, Bagnall, Gardner)<br/> — <i>ericæ</i>, Gyll. (Bold)<br/> — <i>erysimi</i>, F. (Bold)<br/> — <i>contractus</i>, Marsh. (Bold, Bagnall, Gardner)<br/> — <i>quadridens</i>, Pz. (Bold, Bagnall, Gardner)<br/> — <i>geographicus</i>, Gœz. Rare. (Bold)<br/> — <i>pollinarius</i>, Först. (Bold, Bagnall)<br/> — <i>pleurostigma</i>, Marsh. (Bold, Bagnall, Gardner)<br/> — <i>marginatus</i>, Pk. (Bold)<br/> — <i>rugulosus</i>, Hbst. Rare (Bold, Gardner)<br/> — <i>asperifoliarum</i>, Gyll. (Bold, Bagnall)<br/> — <i>litura</i>, F. (Bold) <i>Derwent Valley and Weardale</i> (Bagnall)<br/> <i>Ceuthorhynchidius</i>, Duv.<br/> — <i>floralis</i>, Pk. (Bold, Bagnall)<br/> — <i>pyrrhorhynchus</i>, Marsh. Not common (Bold)<br/> — <i>melanarius</i>, Steph. <i>Durham</i> (Ornsby's Durham)<br/> — <i>terminatus</i>, Hbst. Rare. (Bold)</p> | <p><i>Ceuthorhynchidius</i>, Duv.<br/> — <i>horridus</i>, F. Very rare. <i>Westoe</i> (Bold)<br/> — <i>troglodytes</i>, F. (Bold, Gardner)<br/> <i>Rhinoncus</i>, Steph.<br/> — <i>pericarpus</i>, L. (Bold, Gardner)<br/> — <i>gramineus</i>, F. Very rare. <i>South Shields</i> (Bold), <i>Hartlepool</i> (Gardner)<br/> — <i>perpendicularis</i>, Reich. (Bold)<br/> — <i>castor</i>, F. <i>Gibside</i>, rare. (Bold)<br/> <i>Litodactylus</i>, Redt.<br/> — <i>leucogaster</i>, Marsh. (Bold)<br/> <i>Phytobius</i>, Schm.<br/> — <i>4-tuberculatus</i>, F. (Bold, Gardner)<br/> <i>Limnobaris</i>, Bed.<br/> — <i>t-album</i>, L. (Bold)<br/> <i>Balaninus</i>, Germ.<br/> — <i>villosus</i>, F. Rare. (Bold)<br/> — <i>salicivorus</i>, Pk. (Bold, Bagnall)<br/> <i>Calandra</i>, Clair.<br/> — <i>granaria</i>, L. (Bold)<br/> — <i>oryzæ</i>, L. Imported (Bold)<br/> <i>Magdalis</i>, Germ.<br/> — <i>carbonaria</i>, L. Near <i>Gibside</i> (? Bold)</p> | <p><i>Magdalis</i>, Germ.<br/> — <i>armigera</i>, Fourc. (Bold)<br/> <h3 style="text-align: center;">SCOLYTIDÆ</h3> <i>Scolytus</i>, Müll.<br/> — <i>destructor</i>, Ol. (Bold)<br/> <i>Hylastes</i>, Er.<br/> — <i>ater</i>, Pk. (Bold)<br/> — <i>opacus</i>, Er. Rare (Bold)<br/> — <i>palliatu</i>s, Gyll. (Bold)<br/> <i>Hylesinus</i>, F.<br/> — <i>crenatus</i>, F. (Bold, Bagnall)<br/> — <i>fraxini</i>, Pz. (Bold, Bagnall)<br/> — <i>vittatus</i>, F. <i>Gibside</i> (Hardy)<br/> <i>Myelophilus</i>, Eich.<br/> — <i>piniperda</i>, L. (Bold, Bagnall)<br/> <i>Phlæophthorus</i>, Müll.<br/> — <i>rhododactylus</i>, Marsh. (Bold, Bagnall)<br/> <i>Dryocætes</i>, Eich.<br/> — <i>villosus</i>, F. <i>Gibside</i> (Bold)<br/> <i>Tomicus</i>, Lat.<br/> — <i>laricis</i>, F. <i>Byermoor</i> (Johnson) imported<br/> <i>Pityogenes</i>, Bed.<br/> — <i>chalcographus</i>, L. <i>Sunderland</i> (Kirwood)<br/> — <i>bidentatus</i>, Hbst. (Bold)<br/> <i>Trypodendron</i>, Steph.<br/> — <i>domesticum</i>, L. (Bold, Bagnall)</p> |
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## LEPIDOPTERA

### *Butterflies and Moths*

Though the surface characteristics of Durham will be discussed under other heads, it appears desirable to refer briefly here to those affecting the Lepidopterous fauna. Durham is not one of the larger counties of England, having a superficial area of less than a thousand square miles, but this includes an unusual diversity of surface. It has a coast-line of some thirty-five miles. The river Tees is the southern boundary of the county, and on the Durham side of the river mouth is an extensive salt marsh, with characteristic plants and insects. From this point to Seaton Carew, the southern boundary of the Hartlepoons, is about six miles. Following the windings of the shore, the Hartlepoons take about other six miles; from their northern boundary it is nearly ten to Seaham Harbour, this distance being occupied with banks of blown sand, alternating with limestone cliffs and earthy banks. The cliffs are worn in several places, by the action of small streams of water, into ravines, locally called 'Denes.' Some of these are of considerable length, have well-wooded sides, and afford shelter to a great variety of insects. Castle Eden Dene, the largest of these ravines, winds inward for several miles. It is not only the longest, but is the widest of all, and has long been known as a famous habitat of Lepidoptera. Hesleden Dene, a few miles nearer Hartlepool, is of considerable length, but is not nearly so wide, nor so favourable for collectors, being without open paths. Hawthorn Dene is nearer Seaham Harbour, but is less extensive and has been very little examined, being inconvenient of access. There are many other smaller places along the coast, the shorter ravines being called 'Gills.' After this range of cliffs and sand banks, we reach Seaham Harbour, over ten miles to the north of Hartlepool. A few miles further north, and we reach Sunderland, Ryhope Dene lying between these towns. Seven or eight miles further is South Shields, on the south side of the river Tyne, which forms the boundary to the north. The longest stretch of shore, unbroken by town or even village, is between Hartlepool and Seaham Harbour, and there, and in the Denes, a great variety of insects may be found. At Hartlepool, Sunderland, and South Shields are extensive 'Ballast Hills,' formed

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of dredgings from various rivers and other materials brought as ballast by sailing ships. These, as laid down, are overgrown with a vast variety of plants, many of which are not indigenous to Durham; and it would almost appear as though pupæ had been brought in the ballast, as well as seeds of strange plants, for many insects have occurred at these places that are not otherwise known, some of which appear to have established themselves.

Westward from the coast the land gradually rises, and after a wide expanse of arable and pasture land, well wooded in places, we reach boggy moors, and high basaltic cliffs, almost mountainous in altitude. Thus we have in Durham a littoral fauna, that pertaining to cultivated land and to woods, and the fauna more closely allied with moor and mountain. A deposit of coal underlies much of the county, which has been extensively mined, and in all places where the pits open, large piles of waste accumulate. These take fire and burn for many years, sending forth volumes of sulphurous smoke, which exercises a very deleterious influence on all vegetable life for a considerable distance around. These have unquestionably caused the disappearance of Lepidoptera in their districts. The growth of towns, and increase of large works, sending forth volumes of smoke and vapour, have also had a very injurious effect. In the suburbs, white butterflies and similar species occur freely enough, but others need more secluded haunts. In many other ways the district is being altered. Even the swamp at the mouth of the Tees is being pumped for brine, and roads and railways are reaching even the most out-of-the-way places.

### RHOPALOCERA

#### *Butterflies*

The most noteworthy fact with regard to the butterflies of Durham to-day is the large number that have disappeared during the Victorian era. Of the thirty-five butterflies enumerated below, it would now be quite impossible to capture half of that number, even in a most favourable season; in fact, I doubt if many more than a dozen could be got with certainty, even by visiting certain restricted haunts.

The Common Whites, *Pieris brassicæ* and *rapæ*, are found everywhere except on the higher moorland. They are most abundant in the outskirts of towns and villages, and about market gardens, where cabbage and nasturtium are grown. The Green-veined White, *P. napi*, is also common, but it is more frequently found in woods and country lanes than near towns. The Orange-tip, *Anthracis cardamines*, is generally common, but never so plentiful as the preceding. It disappeared from the coast district about 1860, but has gradually returned to its old haunts and is again plentiful there. The Clouded Yellow, *Colias edusa*, is but a casual, occasional visitor, generally appearing when extra large swarms are visiting the south. In 1870, the great *Edusa* year, it was quite common in all parts of the county, and certainly bred here, the imago, in perfect condition, being plentiful in the autumn, and a few apparently hibernating, and appearing in the following spring. The Brimstone, *Gonopteryx rhamni*, is not a native of this part of England; indeed, the food-plant does not grow wild in Durham, and only one or two stray specimens of the butterfly have been noticed within the boundaries of the county.

The Silver-washed Fritillary, *Argynnis paphia*, was taken in Castle Eden Dene at least as late as 1855. It also occurred at Gibside and other places in the north-west of the county. In 1853 it was taken at Darlington, but I have seen no more recent records than these, even of stray specimens. The Dark Green Fritillary, *A. aglaia*, was formerly comparatively common, occurring in Castle Eden and Hesleden Denes, and on the coast at Black Hall Rocks, and elsewhere. It was common, also, in most of the cultivated area within the county, Bishop Auckland, Chester-le-Street, and various places in the Derwent Valley. It has now quite left the coast, but is still plentiful in the Wear Valley, and westward. At Byers Green a very fine dark variety was taken some years ago by Mr. Thomas Hann. It was all suffused with dark scales, not like the *Valezina* variety of *Paphia*, but a rich, dark fulvous. The Pearl-bordered Fritillary, *A. euphrosyne*, was formerly common in all parts of the county. It disappeared from Castle Eden Dene and other coast localities in the early sixties, but it is still common in the west, and especially in the north-west. It is abundant about Stanley, and larvae may be found freely. The small Pearl-bordered Fritillary, *A. selene*, was also widely distributed and common, but not so abundant as *Euphrosyne*. It still occurs about the western portions of the county and adjoining district. A specimen was taken in Hesleden Dene some



## INSECTS

fifteen years ago, the only one I know of there. *A. adippe* has been several times recorded as occurring in the Wear Valley. I have investigated every case that came under my notice, and always found the examples so-called were only *Aglaia*. I mention this here to avoid subsequent error. The Greasy Fritillary, *Melitæa artemis*, was formerly common at Black Hall Rocks, near Hartlepool; at Flass, near Durham; at High Force, Upper Teesdale, and a few other places. It disappeared from Black Halls in the early sixties, and I have seen no record of its appearance elsewhere since 1872. The Comma, *Vanessa c-album*, was an abundant insect in Castle Eden Dene fifty years ago, and occurred more sparingly in a few places in the west of the county. I have seen it so plentiful that they were shouldering each other on the Scabious flowers, and I have taken five specimens at one stroke of my net. I know of no records for at least forty years. The Small Tortoiseshell, *V. urticae*, is common everywhere, and the larvæ may be found on every bed of nettles. It is locally called the King William. Of the Large Tortoiseshell, *V. polychlora*, an old work speaks as if it were a regular resident in the woods in the vale of the North Tyne. During the last fifty or sixty years but one or two wandering specimens have been seen. The Camberwell Beauty, *V. antiopa*, has been casually taken in all parts of the county, especially near the coast. 'About the year 1820' the late William Backhouse found this species in vast numbers on the sands at Seaton Carew, washing in with the tide. Some were dead, but many were still living. The late George Wailes, who wrote a 'List of the Butterflies of Northumberland and Durham' in the *Transactions of the Tyneside Natural History Society*, referred to a friend who professed to know the species well and called it the 'White Petticoats.' This is a very appropriate name, and Mr. Wailes argued from these facts that the species was then a well-known and regular resident. I doubt if Lepidopterists would consider these sufficient evidence now. On 8 February, 1869, a specimen was taken near Castle Eden, by Mr. Barron, a woodman, who was burning some undergrowth, among which the insect had evidently retired for hybernation. It was much worn, but was evidently hybernating. The Peacock, *V. io*, was widely distributed half a century ago, but it left us with the others in the early sixties, and only odd specimens have been seen since. Mr. Barrett thinks this species dislikes manufacturing districts and large towns; but that would not explain its absence from the west and north-west of the county, nor from the wide coast area between Hartlepool and Seaham Harbour. The Red Admiral, *V. atalanta*, disappeared with the last, but it has gradually returned, and occurs in all parts of the county now. I have seen it far up the Teesdale Hills. The Painted Lady, *V. cardui*, appears at intervals, occasionally in large numbers, and is met with in every part of the county. It does not appear able to perpetuate its race, and long intervals sometimes elapse without it being seen. I have observed the larvæ in November on withered thistles, where there was no chance of their being able to feed up. It was unusually abundant in the autumn of 1903, after several years of absence.

The Mountain Ringlet, *Erebia blandina*, was, I believe, first described as a British insect from specimens taken at Castle Eden Dene. It still occurs there, even down to the mouth of the Dene, scarcely above the level of the sea, and all the way up the gill to open woods at Thornley and Wellfield stations. There it is plentiful, and in the wood to the west of the railway, but it does not occur beyond the turnpike road to Wingate, which passes through the wood, though the portion to the west of this road appears to be of precisely the same character. The Speckled Wood, *Satyrus ageræa*, was the earliest butterfly to leave the county. It formerly occurred in all the woods and denes, but left us altogether quite ten years prior to any other species. The Wall, *S. megæra*, was plentiful all over the county up to 1861. On the coast it was perhaps the commonest butterfly. It disappeared quite suddenly in 1861, and has never returned. The Grayling, *S. semele*, was also well distributed along the coast, wherever the locality was suitable. It was plentiful on the limestone cliffs, and equally so on the ballast hills. It left us gradually, seeming slowly to die out. The last was seen at Black Hall Rocks some ten or twelve years ago. The Meadow Brown, *S. janira*, is yet common in all grassy places, continuing on the wing till September. The Gate Keeper, *S. tithonus*, is still plentiful in many places, but it has gone from some of its old haunts, and seems to be gradually disappearing. The Ringlet, *S. hyperanthus*, has gone altogether. It was common enough fifty years ago. The last specimen I took was the variety *arete*, being entirely without rings. This was taken on the railway side, near Hart Station. The Marsh Ringlet, *Chortobius dærus*, is common on the higher moors in the west. It is fairly intermediate between the dark Lancashire form, with many distinct rings, and the light Scotch form, with few or none. The Small Heath, *C. pamphilus*, occurs everywhere, and is common from June to September. A variety of the underside with a dark fascia behind the tip spot is comparatively common. This



## A HISTORY OF DURHAM

fascia sometimes spreads and makes the entire underside dark. It does not appear to affect the upper side at all.

The Purple Hair Streak, *Thecla quercus*, occurs only in the north-west of the county, about Gibside and the Derwent Valley. It is far from common, and is the only Hair Streak occurring in the county. The Copper, *Polyommatus phlaeas*, is plentiful. Varieties approaching *Schmidtii* have been met with near Hartlepool and elsewhere. The Brown Argus, *Lycæna agestis*, occurs on the coast, extending up the Denes almost as far as they run. The local form, which is generally without the orange marginal spots, was considered distinct, and was named *salmacis* by Stephens. *Artaxerxes*, the Scotch White Spot, occurs occasionally, and sometimes has, as well as the type, the marginal row of orange spots. I have twice taken a variety in which the spots on the underside are without the white line around them. The insect is slowly disappearing from the banks at Black Halls. It has already left Marsden, but it is still plentiful between Black Halls and Seaham Harbour. The Common Blue, *Lycæna alexis*, is very common everywhere. The Little Blue, *L. alus*, was well distributed over the county, and still occurs at a few places. The Holly Blue, *L. argiolus*, was also well distributed, occurring apparently everywhere. There has been no record of its capture for over fifty years.

The Dingy Skipper, *Thanaos tages*, is tolerably well distributed, and there are few places where it may not be taken. The Common Skipper, *Hesperia sylvanus*, has been taken at Darlington, Castle Eden Dene, and other places. The last I know of were taken in Castle Eden Dene in 1860, and in Hesleden Dene in 1861.

### HETEROCERA

#### Moths

#### NOCTURNI

The Eyed Hawk Moth, *Smerinthus ocellatus*, has occurred occasionally, but it is not a resident species, though the larvæ have been met with more than once. The Poplar Hawk Moth, *S. populi*, is abundant everywhere. The Death's Head, *Acherontia atropos*, occurs all over, not regularly, but almost every year. I have had the imago brought me that had come on board fishing boats at sea. The larvæ is also occasionally found. The Convolvulus Hawk, *Sphinx convolvuli*, is rarer than the last, and generally occurs singly. The larva has never been met with, but in the adjoining county more than fifty were found on a hedge overgrown with *Convolvulus sepium*. The Privet Hawk, *S. ligustri*, was once found, unexpanded, in a street in Hartlepool. It ought to occur in the Denes, where privet abounds, but we have never found it. The Bedstraw Hawk, *Deleiphila galii*, has been taken on the coast whenever the insect has appeared in Britain. The larvæ has also been found on the Bedstraw more than once. *D. lineata* has been recorded three times—near Sunderland, by the late William Backhouse, on the moor at Hartlepool in 1888, and again there in 1896. *Chærocampa celerio* has been met with a few times in the same way. The Small Elephant, *C. porcellus*, was formerly common along the coast, and may probably occur yet, between Black Halls and Seaham Harbour, but there are no records for several years. A single specimen of *C. nerii* was taken by Mr. Gardner at Hartlepool on 23 July, 1885. The Humming Bird Hawk, *Macroglossa stellatarum*, is generally common on the coast, but much rarer inland. *M. bombyliiformis* appears to occur near Durham city. It was taken at Shull over fifty years ago by the late William Backhouse; Mr. Wood also took it near Durham (E. W. I., i. 150). Mr. Hedworth saw it in May, 1869, near Winlaton Mill. I know of no more recent records. *Sesia formicæformis*, the Red-tipped Clearwing, has been taken once, by Mr. Thomas Pigg, who took three on an umbelliferous plant at Gibside. It also occurs in the Chester-le-Street district. *S. tipuliformis*, the Currant Clearwing, is commoner, and no doubt occurs in old gardens in many parts of the county. It has been taken at Darlington, Wolsingham, and Durham city. *S. confinis* occurs commonly in most parts of the county. *S. apiformis* was taken once near High Force, Upper Teesdale, by the late William Backhouse, over fifty years ago. The Goat Moth, *Geometra infensa*, is sparingly distributed about the county. All the genus *Hepialus* occur freely. The Golden Swift, *H. batia*, in woods and denes, flying at sunset for a few minutes only. The Common Swift, *H. lupulinus*, is most abundant everywhere. The Beautiful Swift, *H. sylvinus*, is perhaps the least plentiful; it occurs in open ground in August. The Northern Swift, *H. velleda*, in woods and open ground. The Ghost, *H. humuli*, is the most abundant of all, the male flying everywhere in its endeavour to attract the female. The

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Forester, *Ino staticeæ*, occurs at Gibside ; near Darlington ; and at other places away from the sea. *I. geryon* is abundant on the sea banks from Black Halls, northward, but not inland. *Zygæna loniceræ* at Shull and other places well in the centre of the county. *Z. filipendulæ* appears to be common everywhere. The *Lithosiidæ* are very sparingly represented, most of the specimens captured being but single stray specimens. *Nudaria mundana* is the only common member of the family. It does not occur on nor even very near the coast, but is very abundant westward. The late John Sang took *Lithosia helvola* once at lamps at Darlington. *L. complana* was taken by the late William Backhouse, both at Darlington and Seaton Carew, over fifty years ago, but it has not been recorded again. *L. complanula* was taken at Hartlepool in 1873. I took it again in 1876, and one or two more were taken by others at the same time. Common as it is generally, I have seen no later record. *Ctenistis quadra* occurred oddly, in different parts of the county, from 1872 to 1875, in which year I took six. It has not been seen since.

*Euchelia jacobææ*, the Cinnabar, occurs all along the coast, but is not nearly so common as it was fifty years ago. It has not been recorded inland. *Euthemonia russula*, the Clouded Buff, is found on the moors in the extreme west of the county. It has been recorded for Shull and for Wolsingham, and occurs elsewhere. *Nemophila plantaginis*, the Wood Tiger, occurs on the coast and on the moors. It is especially abundant on the railway banks near Hartlepool, but is being gradually driven away by the growth of the town. The Common Tiger, *Arctia caja*, abounds everywhere in the larval state. Specimens with dark and yellow hind wings have been reared. An example, entirely black, was reared from a Hartlepool larvæ. The Ruby Tiger, *Phragmatobia fuliginosa*, occurs all over the county, generally in some numbers. The Muslin (*Spilosoma mendica*) occurs all over the county, extending quite to Upper Teesdale. The Buff and White Ermines (*S. lubricipeda* and *menthastris*) are generally common. I have taken the dark form of *menthastris* near Throston. The Brown Tail (*Liparis chrysorrhæa*) is but a casual visitor. It was taken at Darlington quite fifty years ago by the late William Backhouse. In 1875 several were taken, two at South Shields and I got about a dozen at Hartlepool. It has not been seen since. The Gold Tail (*L. auriflua*) was taken in 1875 at South Shields and recorded as new by Mr. Eales in error. It is common about Hartlepool and Greatham and westward to Bishop Auckland and Upper Teesdale. The Satin Moth (*L. salicis*) occurred in 1875 both at South Shields and Hartlepool, but it has not been recorded since. The Dark Tussock (*Orygia fascelina*) is found in the west of the county, about Shull, Wolsingham, etc. A solitary larva was found on the Sea Banks near Hesleden Dene mouth in 1859. The Vapourer (*O. antiqua*) is common in all the county, the larva feeding on hawthorn generally, and on *Rosa spinosissima* on the sand banks. The Pale Oak Eggar (*Trichiura cratægi*) is given in Stainton's *Manual* as occurring at Darlington, and it is in the list in Ornsby's *Durham*, but I have no other knowledge of its appearance in the county. The December Moth (*Pecilocampa populi*) is well distributed over the county, but it is in the perfect state at a time when collectors are not much on the look out, and most of our specimens are bred. The Small Eggar (*Eriogaster lanestris*) is common, but, emerging in February, it is seldom seen on the wing, and, like the last, most of our specimens are reared. The Lackey (*Bombyx neustria*) has only twice been taken at South Shields. The Oak Eggar (*B. quercus*) is tolerably common. It generally passes one winter as a larva and the next as pupa. The Fox Moth (*B. rubi*) is common on the sandhills and on all moors and heaths, sometimes very abundant. I bred some very curious varieties a few years ago. The Drinker (*Odonestis potatoria*) is common generally, but does not occur in the Auckland district. A specimen of the Small Lappet (*Gastropacha ilicifolia*) was sold in 1895 in Dr. Wheeler's collection, labelled 'Castle Eden, J. Sang.' I have grave doubts, not that the specimen was British, but as to the place where it is said to have occurred, and of its reputed captor. It was much more likely to have been taken in Upper Teesdale, but it certainly was not a species that Mr. Sang ever had in duplicate or ever took. The Emperor Moth (*Saturnia carpi*) is abundant on the moors in the west, but rarely occurs elsewhere.

### GEOMETRÆ

The Swallow-Tail Moth (*Ourapteryx sambucata*) is well distributed in Durham, but never very common. *Epione vespertaria* has occurred sparingly in most parts of the county. *Rumia cratægata*, the Brimstone, is abundant everywhere. *Venilia maculata* was taken by Mr. Sang around Darlington, but no one else appears to have met with it. The Light Emerald (*Metracampa margaritata*) is common in woods everywhere. The Barred Red (*Idolopis fasciaria*) is rare in Durham. It has been taken in Upper Teesdale ; at St. John's, Weardale ; and at Edder Acres, near Hartlepool. A single specimen also came to the



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Hartlepool lighthouse. A solitary example of *Eurymene dolobraria* was taken at little Polam, Darlington, many years ago, by the late William Backhouse. *Pericallia syringaria* also has only once been met with, a single specimen being taken by Mr. Hedworth in the north-west of the county. It ought to occur in the denes on the coast, where privet grows freely. The Common Thorn (*Selenia illunaria*) is common in most parts of the county. The Lunar Thorn (*S. lunaria*) is decidedly rare. It has been recorded from several places, but appears only to occur singly, and less than a dozen local specimens are known. *Odontopera bidentata* and *Crocallis elinguaris* are both common, but least so near the coast. Four of the genus *Ennomos* have been taken within the county, but none appear to have any station where they may always be found. *E. tiliaria*, the Canary-Shouldered Thorn, has occurred over most of the county, but always singly or very sparingly. *E. fuscantaria* was taken at Darlington in 1855. Two specimens of *E. erosaria* are recorded: one in August 1873, at Hartlepool, by the late P. W. Robson, and one at Thornley, in the north-west corner of the county, by the late W. Maling, two years later. *E. angularis* has been taken only in the Derwent Valley, and very rarely there. The Feathered Thorn (*Himera pennaria*) is widely distributed, but has only been taken singly. The Pale Brindled Beauty (*Phigalia pilosaria*) is well distributed and not uncommon, occurring from February to April, according to the weather and locality. *Nyssia hispidaria* was reared recently from larvæ found by Mr. Sticks at Lintz Green. The Peppered Moth (*Amphidasis betularia*) is well distributed, and the black variety, *Doubledayaria*, also occurs freely in most places. Intermediate forms are quite rare. The Barred Umber (*Hemerophila abruptaria*) has occurred at Darlington and Hartlepool. *Cleora lichenaria* is marked in Stainton's *Manual* as being taken at Darlington. I do not know the authority. *Boarmia repandata* is common everywhere, and the banded variety *conversaria* is not very uncommon. *B. rhomboidaria* is equally plentiful, except on the coast, where it is not often seen. *Tephrosia crepuscularia* is common in the denes, Castle Eden and Hesleden particularly. I have seen no other record, but it is sure to occur. The Little Emerald (*Iodis lactearia*) is met with in the north-west and in the south-east of the county, but is not common in either. The Common Emerald (*Hemithea thymiaria*) has occurred once at Darlington. *Ephyra trilinearia* has only once been taken in the north of the county. *E. punctaria* is distributed over almost all the county, but is of very rare occurrence. *Asthena luteata* occurs in the far west—Upper Teesdale—and along to Thornley Wood (near Newcastle) in the north. It has never been seen near the coast. *A. candidata* occurs commonly in the denes, and in the Derwent area. It is not recorded elsewhere, but almost certainly will be found. *A. sylvata* is recorded from Darlington in Stainton's *Manual*. *A. blomeri* was first taken in Castle Eden Dene, in July 1831. It may still be found there and in Hesleden Dene. *Eupisteria heparata* occurs sparingly in damp places. It has been met with at Darlington, Hartlepool, and in the north-west of the county. *Venusia cambrica* is scarce and very local, and only seems to have been taken in the south of the county. The rare *Acidalia rubricata* was taken at Winch Bridge, Upper Teesdale, in 1875, by Dr. Lees. The specimens are in my possession. *A. scutulata* is widely distributed, but never very common. *A. bisetata* is more numerous. *A. trigeminata* was taken once, two specimens. *A. osseata* is common on the coast. It does not appear to have been taken elsewhere. *A. virgularia* is well distributed and common. *A. subsericeata* is very abundant around Hartlepool, but does not occur elsewhere within a distance of at least 100 miles. I took a single specimen of *A. immutata* at Black Hall Rocks in 1895, and one only of *A. remutata* was taken nearer Hartlepool. *A. fumata*, the Smoky Wave, is found in Upper Teesdale, as also is *A. imitaria*, the Small Blood Vein. This has also been found at Darlington, and I took one in Hart Lane, Hartlepool, and one in Upper Teesdale. *A. aversata* is the commonest of the genus in Durham, occurring everywhere, and generally fairly plentiful. *A. inornata* occurs at Black Hall Rocks and at Wolsingham, always sparingly. The Blood Vein (*Bradypetes amataria*) is given in the *Manual* as occurring at Darlington. I have no personal knowledge of it. The *Cabera* occur everywhere: *pusaria* among birch, *exanthemaria* among willow. The variety of *pusaria*—*rotundaria* is bred occasionally; I have not known it taken on the wing. *Macaria liturata* is well distributed, but not common. *Halia wavaria* is generally a garden insect, but not always. It is tolerably common. *Strenia clathrata* is common on the coast, and occurs occasionally elsewhere. A variety without cross-bars has been taken. *Lozogramma petraria* is a moor insect, but is recorded here only from the coast at Ryhope Dene. *Numeria pulveraria* is recorded from the woods on the Derwent, from Hoffall Wood, from Darlington, and from Hesleden Dene. It is quite a scarce species. *Mæxia belgiaria* is common on the moors both of Teesdale and Weardale. It does not occur anywhere else. Only the two common *Fibria* occur; *clavaria* on all the moors, *pinaria* in woods where there is plenty of



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Scotch fir. *Aspilates strigillaria* was recorded at Shull by the late W. Backhouse over fifty years ago. There are no more recent records, but it is certain to occur in the west. *Abraxas grossulariata* occurs everywhere, and some curious varieties have been taken; one with a deep yellow ground at Byers Green, one nearly black at Throston, and others elsewhere. Larvæ nearly black occur at Shields and Sunderland, producing absolutely ordinary forms of the imago. *A. ulmata* occurs plentifully in the denes and woods; it varies considerably in the depth and extent of the markings; but extreme forms do not occur, except that one specimen was taken in Castle Eden Dene of an unusually pale character. *Lomaspilis marginata* is common in woods. It is an excessively variable species, but extreme forms are rare. All the *Hybernide* occur: *rupicaprararia* and *progremmaria* common everywhere, *leucopbearia* and *aurantiaria* rare, *defoliaria* and *Anisopteryx æscularia* rare on the coast, but common inland. The Winter Moth (*Cheimatobia brumata*) is abundant everywhere. *C. boreata* has only been reported from Darlington, but it is certain to occur elsewhere. It occurs in Northumberland. *Oporabia dilutata* is common everywhere; *O. filigrammaria* common on the moors; *O. autumnaria* has been taken only once or twice. *Larentia didymata* abounds everywhere. *L. multistrigaria* is common along the coast, and wherever *Galium verum* grows freely. *L. cæsiata* absolutely swarms on the higher moors in Upper Teesdale and Weardale. *L. flavicinctata* is at present only recorded from the Middleton-in-Teesdale district. It probably occurs in all the higher land. *L. salicaria* has also been taken in Upper Teesdale, but not commonly; *L. olivaria* is tolerably common inland, but has not been taken near the coast. *L. miaria* is the most generally distributed, and most plentiful of the genus, except *didymata*. It occurs in woods all over the county. Nearly all the *Emmelesia* occur: *affinitata* and *alchemillata* in denes and woods, but neither very common; *albulata* plentiful among *Rhinanthus christa-galli*; *decolorata* decidedly scarce, but occurring, generally singly, almost everywhere. *Tæniata* was first taken in Castle Eden Dene by the late J. C. Dale; many years passed and the late George Wailes was in the dene and found an *Emmelesia* flying very freely; thinking it to be *albulata*, he took two or three only, but on arriving at home, he found they were *tæniata*; he went the next day, but never saw one, nor did he meet with it again. Hundreds of collectors have been since, but no one has taken it there again. Dr. Lees met with it far up the hills in Upper Teesdale. *Unifasciata* was common at the foot of Hart Lane, near Hartlepool, some forty years ago. It has not been taken recently, but is certain to occur. *Blandiata* was once taken at Hartlepool. No less than twenty-eight species of the genus *Eupithecia* have been met with in the county, viz., *venosata*, which has an old record for Darlington, and has been taken at Hartlepool once or twice. *Linariata* has been reared at Seaham Harbour and Hartlepool. *Pulebellata*, common wherever foxglove grows, more particularly in the extreme west. It is never seen on the coast limestone. *Centaureata* is well distributed, but local, and never very plentiful. *Subfulvata* is fairly common, occurring in most places. *Pygmæata* is given in the *Manual* as occurring at Darlington. *Satyrata* and *castigata* are generally common. *Lariciata* is well distributed, but not very abundant. *Pimpinellata* was only once taken at Hartlepool. *Albipunctata* and *valerianta* have been taken at Hesleden Dene. *Innotata* has a little doubt attached to its occurrence, as only melanic specimens are known, and they might be some other species, but there is every reason to believe that it does occur. *Indigata* is widely distributed. *Nanata* is abundant on the moors, and common on the coast wherever heather grows. *Subnotata* has been taken occasionally about Hartlepool. *Vulgata* is tolerably common and is found all over the county. *Absynthiata* is only recorded from the coast, where it occurs for the entire length; *Minutata* only in the west, where it is plentiful on the moors. *Assimilata* is a garden insect, and widely distributed, but never very common. *Tenuiata* is to be found in the larval state in all woods, but the imago is seldom seen at large. *Subciliata* is given in the *Manual* as occurring at Darlington. *Atreviata* has occurred in most places, but always scarce. *Exiguata* is generally common among whitethorn. *Solrinata* occurs all along the coast and again on the hilly land in the west. The food plant appears to be dying off on the cliffs, and the insect must of course disappear also. *Togata* is on the list from a solitary specimen taken at a gas lamp at Darlington by the late John Sang. It is likely to occur in the many fir woods of the county. *Rectangulata* occurs in orchards and is far from common. The black variety, *nigrosericcata*, has not been recorded, but is sure to occur; it is plentiful at Newcastle-on-Tyne.

*Lothophora wiretata* was taken freely in 1881, at Gibside, by the late Mr. Hedworth. I do not know that it has been taken since, but the large number that were taken then could not have been immigrants. *L. lobulata* occurs in Castle End Dene and many of the larger woods. *Thera juniperata* occurs in Upper Teesdale, above High Force Fell. Except that it was once

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taken at Sunderland, it has never occurred on the coast, and as the juniper is dying off there it is not likely to occur now. *T. simulata* occurred on the coast, wherever *Eupithecia sobrinata* was found. This also has not been taken there lately. It occurs, not very commonly, among juniper on the high land in the west. *T. variata* occurs in fir woods, is not very plentiful, though generally distributed. *T. firmata* has only been taken in the west of the county, Witton le Wear, Upper Teesdale, etc. *Ypsipetes ruberaria* occurs in the Derwent Valley and in Hesleden Dene. Wonderful varieties may be reared. *Y. impluviata* occurs both in Castle Eden and Hesleden Denes, also at South Shields and in Upper Teesdale. *Y. clutata* is generally distributed all over the county and is very common. *Melanthia rubiginata* is well distributed over the county, but never very abundant. *M. ocellata* is also widely spread, occurring almost everywhere, but, like the last, it is never in great numbers. *M. albicillata* is decidedly scarce, but has been met with, generally singly, almost all over the county. *M. bastata* has not been taken for quite fifty years. It was then found at Hoppylands. *M. tristata* appears to avoid the coast, but it is fairly common elsewhere. *M. unangulata* and *rivata* were both taken by the late William Backhouse in Houghall Wood near Durham. It does not occur there now. A coal mine near has destroyed much of the lepidoptera in this wood. There is no other locality in the county for either. *M. biriviata* and *montanata* are abundant everywhere. *M. galiata* has only occurred once or twice, but at distant localities. *M. fluctuata* is abundant all over the county. The specimens are large and darker than those from the south. The variety *Neapolisata* occurs. *Anticlea badiata* is common everywhere, by hedges mixed with rose, and similar places. *A. derivata* is widely distributed but rare. *Coremia munitata* is even more widely distributed, and rather more plentiful than the last, but it is still a rare species. It is generally found in or near marshy ground. *C. propugnata* has occurred in the west of the county, but never elsewhere. *C. ferrugaria* is common in Upper Teesdale, but scarcely taken elsewhere. *Camptogramma bilineata* is abundant everywhere. A variety with a black band is not uncommon. *Phibalapteryx lignata* has occurred near Sunderland and at Hell Kettles, Darlington. *Scotosia dubitata* has occurred, generally singly, in most parts of the county. A single specimen of *S. certata* was taken at Hartlepool in 1864, and of *S. undulata* in Upper Teesdale in 1875. *Cidaria psittacata* is widely distributed, but is very scarce. *C. miata* is also widely distributed and often common. *C. corylata* is in all the woods and denes, and never rare. The variety *albo-crenata* occurs occasionally. *C. russata* is everywhere, always common. The variety *comma-notata*, with red centre to the fore-wings occurs also, but not very abundantly. *C. immanata* is also common in woods and denes, to which it appears to be more closely confined than is *russata*. *C. suffumata*, the earliest of the genus, occurs everywhere; a dark variety, *piceata*, is also very common. *C. silaceata* is very generally distributed, but not so common as the last few species. A second brood may be reared in confinement, but is never found at large. *C. prunata* is only recorded from the south-west of the county. I think it must occur elsewhere, as it is commonly distributed both in Yorkshire and Northumberland. *C. testata* is common all over. Moorland specimens are generally dark. *C. populata* occurs over the entire county, most plentifully in the west. *C. fulvata* appears everywhere among rose. *C. pyraliata*, like so many others, may be met with anywhere, but it is least plentiful near the coast. *C. dotata* is scarce and very local, appearing only in the west of the county. *Pelurga comitata* is well distributed, but rarely abundant. *Eubolia cervinata* is scarce and very local. An erroneous idea that the food plant of this insect (*Malva sylvestris*) is marsh mallow (*Althæa officinalis*), much used by herbalists, has almost led to its extermination, and has greatly reduced the number of the insect, which was common when I began collecting. *E. mensuraria* is abundant everywhere. *E. plumbaria* is common on waste ground. *E. bipunctaria* appears confined to limestone. It occurs all along the coast on Magnesian limestone, and in Upper Teesdale on Mountain limestone. It is plentiful where it occurs, easily disturbed by day, and flying freely at dusk. *Anaitis plagiata* is well distributed, and occurs regularly, but is never very abundant. It is found well up the hills in the west. *Chesias spartiata* occurs wherever there is broom. This excludes the coast, where broom does not grow. *Olecia dactyphyllata* is common everywhere in meadows, pastures, hedgesides, and similar places where the food plant grows.

### DREPANULIDÆ

*Platypteryx lacertula*, the Scalloped Hook-tip, is widely distributed, but never plentiful. *P. fahula*, the Pebbled Hook-tip, occurs sparingly over most of the county. *Gilix spinula*, the Green-tip, may be found all over the county among hawthorn. It does not occur on the higher moorland.



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## PSEUDO-BOMBYCES

*Cerura furcula*, the Sallow Kitten, occurs sparingly in the larval state in most parts of the county. I do not know that the imago has been taken. *C. bifida*, the Poplar Kitten, has occurred about Hartlepool, but it is much rarer than it was twenty-five or thirty years ago. Like the last the imago is never seen. *C. vinula*, the Puss Moth, occurs everywhere on willow and poplar in the larval state. The moth is seen now and then at rest. *Petasia cassinea* occurred at Darlington in 1853, when the late John Sang took it at gas lamps. Mr. Winter, of Beccles, told the writer that he had taken it at Hartlepool. I can only say I never saw or heard of it. *Pygæra bucephala*, the Buff-tip, was very common half a century ago. It has now almost, or entirely, left the coast area, but is plentiful enough elsewhere. *Clostera curtula*, the Chocolate-tip, was once taken at South Shields—a stray specimen. *C. reclusa*, the Small Chocolate-tip, occurs at Wolsingham, and, probably, elsewhere, where dwarf-willow grows. It has not, however, been taken on the sea banks, north of Black Halls, where the plant grows very freely. *Ptilodontus palpina* has only once been found. I took a larva many years ago in Crimdon Cut, near Hartlepool. *Notodonta camelina* is to be found over all the county; never abundantly, but of regular occurrence. *N. dictæa*, the Swallow Prominent, occurs all over the county, wherever there is plenty of poplar. *N. dictæoides* is much rarer, but appears to be very generally distributed, especially to the west of the county, where birch is more plentiful. I have beaten the larva both in Castle Eden and Hesleden Denes. *N. dromedarius* is also widely distributed, but never common. *N. ziczac* is the most plentiful of the group. It may be found in the larval state on poplars anywhere in the county. *N. chaonia* is rare. Larvæ have been taken in Upper Teesdale and in Hesleden Dene, but only once or twice. *Diloba ceruleocephala* is uncommon, but has been met with inland mostly. My brother found larvæ near Stockton-on-Tees, and a single imago was taken at Hartlepool in 1874, which is the only coast record.

## NOCTUÆ

*Thyatira derasa* is rare; it has only occurred near the River Tyne. *T. batis* is much more plentiful, and has occurred in most places; never abundantly. *Cymatophora duplaris* is widely distributed, but not common. *C. or* is recorded in Ornsby's *Durham*, but no other record is known. *C. diluta* is common in the north-west, but has not been met with elsewhere, the variety *nubilata* with three or more dark bands is not uncommon about Gibside. *C. flavicornis* is generally distributed. *C. ridens* was bred from a larva found at Gibside. The specimen is now in the Museum at Newcastle-on-Tyne. *Bryophila perla* is generally common. *Acronyeta tridens* is recorded, but I feel some doubt as to the correctness of the name. *A. psi* is common generally, and it may be that it has been mistaken for *tridens*. *A. leporina* is widely spread, but is either rare, or we have not learned how to find it. *A. aceris* has occurred once at Sunderland. *A. megacephala*, not at all common, though widely spread. *A. rumicis* is plentiful everywhere; the dark variety *salicis* has been reared. *A. menyanthidis* occurs freely on the moors in the west. *Leucania conigera*, *lithargyria*, *comma*, *impura*, and *pallens* are all very common. *Nonagria fulva* is tolerably plentiful in September. *N. clymi* formerly occurred at South Shields. So far as I know it is now found only at Hartlepool, where it is fairly common in its now much-restricted habitat. *N. lutosa* has been taken at Greatham only, where it was sometimes abundant; the reed has disappeared there, but it is quite likely to exist in other places. *Gortyna flavago* is generally common. *Hydræcia nictitans* occurs all over the county, but is most plentiful in the higher lands in the west. *H. petasitis* occurs at Greatham, and at Dalton le Dale, near Seaham Harbour, and, probably, in all places where the food is plentiful. *H. micacea* is common everywhere. *Xylophasia rurea* and the unicolorous variety *combusta* are generally plentiful. *X. lithoxylea* is very uncertain, sometimes plentiful, and at other times not seen at all. *X. polyodon* and the black variety *infusata* are generally common. The variety is just as uncertain as *lithoxylea* and very similar in its manners. *H. hepatica* is much rarer than the others of the genus, though widely distributed. *Heliophobus popularis* is sometimes common. *Charæus graminis* occurs everywhere, but is seldom plentiful. *Cerigo cytherea* is often common. *Luperina testacea* is always plentiful. *L. cespitis* is rare. It was taken at Shotley Bridge by the late W. Backhouse, and in Upper Teesdale by Dr. Lees. Single specimens have occurred at South Shields and Hartlepool. *Mamestra abjecta* occurs about Hartlepool and Greatham, probably all along the coast. It is decidedly rare. *M. anceps* is taken regularly at Hartlepool, and has been met with at South Shields and Darlington. This also is rare. *M. albicollis* is rather common at Hartlepool and South Shields. I have seen no



## A HISTORY OF DURHAM

other record, but it will be found all along the coast. It comes freely to campion flowers. *M. furva* has occurred in small numbers, at campion flowers, along the coast. *M. brassicæ*, of course, is abundant everywhere. *M. persicariæ* is very rare, one or two only having been taken at sugar at Ryhope, Durham, and Bishop Auckland. *Apamea basilinea* is generally plentiful, as is *A. gemina* and the variety *remissa*. *A. unanimitis* is generally distributed, but not often plentiful. *A. ophiogramma* was once recorded from Hartlepool. *A. fibrosa* was taken in 1875, which was a very marvellous year for *lepidoptera* at sugar, but it has not been seen since. *A. oclea* is always abundant. The black variety only occurs now. Fifty years ago light forms were commonest. All the genus *Miana* occur, *strigilis*, *fasciuncula*, *literosa*, and *furuncula* are common. *Expolita* has been taken freely at Darlington and Hartlepool. It probably occurs elsewhere, but it is not easy to find unless its habits are known. *M. arcuosa* is not very rare; it occurs in grassy places. *Celæna haworthii* is common on the moors in the west. *Grammesia trilinea*, though generally plentiful, is very rare in Durham. It has been taken once or twice on the Derwent, and once only at Hartlepool. *Caradrina morpheus* is not uncommon on the coast, but it is not recorded elsewhere. *C. blanda* is scarcer, and has only been taken at Darlington and Hartlepool. *C. cubicularis* is abundant everywhere. *Rusina tenebrosa* rather common in most places. *Agrotis valligera* plentiful on the coast. *A. suffusa* is neither common nor well distributed. It occurs sparingly on the coast, and has been taken at Bishop Auckland. *A. saucia* has only been twice taken at Bishop Auckland. *A. segetum* and *exclamationis* are both common everywhere. *A. corticea* appears numerous at Bishop Auckland, but not elsewhere. *A. cursoria* is a coast species, much rarer now than fifty years ago. *A. nigricans* general in the county, and far from uncommon. *A. tritici*, another coast insect, and generally abundant. *A. agathina* rare on the moors. *A. porphyrea* is another moorland species, but much more abundant, occurring where there is very little heather. *A. præcox* has been twice met with at South Shields. *A. ravida* occurs on the coast, but is never very plentiful. *Axylia putris* is exceedingly rare, only four specimens, all taken in the west of the county, having been recorded. *Triphæna fimbria* is rather scarce, but appears to occur in most places. *T. janthina* seems to be a garden insect in Durham. It is well distributed, but never plentiful. *T. interjecta* occurs in August on Hartlepool sand hills, which appear to be the northern limit of its range. *T. orbona* is common everywhere. *T. pronuba* is also common everywhere and very variable. *Noctua glareosa* is found all over the county, but it is scarce near the sea. *N. augur*, *plecta*, and *c.-nigrum* are all abundant. *N. depuncta* occurs at Bishop Auckland, and has been taken in Hesleden Dene; it is a rare insect. *N. triangulum* is widely distributed, but, perhaps, is only a wanderer. It is generally a common insect, but here has only occurred singly. *N. brunnea* is well distributed, occurring at edges of woods and open places. *N. festiva* is common, and the variety *confusa* is equally plentiful on the moors. *N. rubi* is widely spread, but never common; it appears rarest near the coast. *N. umbrosa* and *baja* are fairly well distributed, and generally plentiful, but not always. *N. xanthographa* is always much too numerous. *Trachea piniperda*, in pine woods, generally distributed, but not very common. *Tæniocampa gothica*, abundant everywhere and wonderfully variable. *T. leucographa* is only recorded by one collector, who says it is decidedly scarce. *T. rubricosa* is generally common and well spread. *T. instabilis* is plentiful everywhere and very variable. *T. opima* has been taken at Darlington once, but occurs regularly about Hartlepool—never common, but a few each year. *T. populeti* is very scarce. *T. stabilis* is the most abundant of the genus, always plentiful everywhere. *T. gracilis* is common at Hartlepool, and has been taken once or twice in the west. *T. munda* is recorded from Hartlepool only, where it is very rare. *T. cruda* is generally common, but does not appear to associate much with the other members of the genus. *Orthosia suspecta* is very scarce and local. It occurs in Hesleden Dene. *O. ypsilon* has occurred in Teesdale and Hartlepool, but very seldom. *O. lota* is more generally distributed, but never abundant. *O. macilenta* is tolerably common, except on the coast, where it is never seen. *Anchocelis rufina* is well spread over the county, but has not often been recorded. *A. pistacina* also occurs sparingly in most places. *A. lunosa* is very scarce and has only occurred singly. *Cerastis vaccinii* and *spadicea* are generally plentiful, but not common on the coast. *Scopelosoma satellitia*, common generally in autumn, not often seen in spring. *Xanthia citrargo* occurs in the neighbourhood of Durham only. *X. cerago* and *silago* are common in autumn, and *ferruginea* appears everywhere, though not so plentiful as the other two. *Girardina xerampelina* occurs occasionally, but has not yet been taken more than once at any place. *Tethea subfusa* is very rare, and has only been met with at Darlington and near Hartlepool. *Cosmia trapezina* is common and well distributed, least plentiful near the sea. *C. diffinis* was taken in 1898 near Hartlepool by Mr. Gardner—one specimen only.

## INSECTS

*Dianthæcia carpophaga* is common on the coast, but does not occur inland. *D. cucubali*, also a coast species, but not so plentiful as the last. *D. capsicola*, commoner than either, and much more generally distributed. *D. conspersa* is a rare insect and very irregular in its appearance. It has only been taken at Hartlepool and Durham. *Polia chi* is tolerably common, and the variety *olivacea* occurs in most places; the variety is scarcest on the moors. *P. flavocincta* is very general, but never very common. *Dasyptera templi* is perhaps more plentiful than appears. Its habits are peculiar, and it comes out so late in the year that it is seldom seen. It is recorded from Barnard Castle, Darlington, Durham, and Hartlepool, and probably occurs everywhere. *Epunda lutulenta*, on the sandhills and about Hartlepool generally. It comes freely to light. It probably occurs all along the coast, but it also flies late in the year, though earlier than *templi*. *E. nigra* is reported from Bishop Auckland. *E. viminalis* is not very common, but well distributed. *Miselia oxyacanthæ*, generally common. *Agriopis aprilina*, common in the centre and west of the country, but very rare on the coast. *Phlogophora meticulosa* is common enough in the autumn, but much rarer everywhere in spring. *Euplexia lucipara* is generally distributed, but abundant nowhere. *Aplecta herbida* is not common, but occurs all over the county. *A. occulta* is but an occasional visitor, sometimes disappearing for years. *A. nebulosa* is fairly common in woods and denes. *A. advena* is a rare species. Mr. Sang took three between 1853 and 1857. A single specimen was taken at Elwick near Hartlepool about the same time, but there are no more recent records. *Hadena adusta* has been taken around Hartlepool and once in Teesdale. *H. protea* has only been met with in the west—Upper Teesdale and Weardale. *H. dentina*, generally distributed and not uncommon. *H. chenopodii*, very rare, odd specimens only have been met with. *H. suasa* appears to occur only on Greatham salt marsh, where it is rare. *H. olivacea* swarms everywhere. *H. pisi* is common in most places, perhaps more abundant on the coast. *H. thalassina*, well distributed, but never very common. *Xylocampa lithoriza*, not uncommon in early spring. *Calocampa vetusta* is very rare, only occurring singly. *C. exoleta*, common generally in autumn and spring. A single specimen of *Xylina petrificata* was taken in Hesleden Dene in 1898 by Mr. Gardner. *Cucullia chamomillæ* has occurred occasionally at Hartlepool, both larvæ and imagines. *C. umbratica* is generally distributed and never very rare. *Heliothis marginata* is very common on the coast. In some years it is quite the commonest noctua at Hartlepool. The larvæ are abundant on Rest-harrow, and are most persistent cannibals. *H. peltigera* has been taken, singly only at South Shields and Byers Green and twice at Hartlepool. *H. armigera* has also been taken twice at Hartlepool and once at Sunderland. *Anarta myrtilis* is common on the moors and not unfrequent wherever there is ling. *Brephos parthenias* occurs at Wolsingham and in that district, but has not been observed elsewhere. *Abrostola urticæ* is common in the south-west of the Tyne river, and occurs occasionally elsewhere. It is not very rare about Hartlepool. *A. triplasia* is a scarce insect. It was taken by Dr. Lees in Upper Teesdale occasionally, and I took one at Hartlepool long ago. *Plusia chrysitis* is generally distributed, but never very common. *P. bractea* is a great rarity. It has been taken only at Darlington and at Durham. *P. festuæ* is also very scarce, but it may be that it has not been sought for in the right places. Mr. Sang took it at Hell Kettles in 1880. Near Hartlepool I have taken three, but no one else has met with it. *P. iota* is generally distributed and common. *P. v-aureum*, even more plentiful than the last. *P. gamma* swarms in autumn and spring. *P. interrogationis*, on the moors. A solitary specimen was taken at rest on palings at Hartlepool some years ago. *Gonoptera libatrix* is well distributed, but not common anywhere, and apparently becoming scarcer; it has almost left the coast. *Amphipyra tragepogenis* is generally plentiful in autumn. *Mania typica* is another generally abundant insect. Its larger relation *M. maura* is very much rarer than *typica*, but occurs all over the county. *Stilbia anomala* was once taken at Black Hall Rocks by Mr. Gardner, flying in the sun. *Catocala fraxini* was taken at Hartlepool by the same gentleman, at rest on the paling of his own timber yard. *Euclidia mi* is generally common in rough pastures and grassy places. *E. glyphica*, not plentiful and very local, occurring on railway banks and similar places. *Phytometra ænea* is well distributed, but never abundant. It occurs all along the coast and in many places inland.

### DELTOIDES

*Hypena proboscidalis*. Common among nettles  
*Rivula sericealis*. Once in *Hesleden Dene*  
*Herminia grisealis*. Common in woods

### PYRALIDES

*Pyralis glaucinalis*. Once in *Hesleden Dene*  
 — *farinalis*. Generally common  
*Aglossa pinguinalis*. Common in stables



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- Pyrausta punicealis*. Common in *Hesleden Dene*  
 — *purpuralis*. *Black Hall Rocks*  
 — *ostrinalis*. *Black Hall Rocks*. Rare, probably not distinct  
*Herbula cespitalis*. Dry banks and pastures  
*Ennychia cingulalis*. *Darlington* (Stainton's *Manual*)  
*Cataclysta lemnata*. Not very plentiful  
*Hydrocampa nymphæata*. Generally common  
 — *stagnata*. Not very common.  
*Botys lupulina*. Once at *Hartlepool*  
 — *verticalis*. Generally common  
 — *fuscalis*. Very common  
 — *urticata*. Very common  
*Ebulea crocealis*. Common among flea-bane  
 — *sambucalis*. *Darlington*. Once at *Hartlepool*  
*Pionea forficalis*. Common in gardens  
*Spilodes sticticalis*. Once at *Hartlepool*  
*Scopula lutealis*. Very common  
 — *olivalis*. Very common  
 — *prunalis*. Common about *Hartlepool*  
 — *ferrugalis*. Once at *Darlington*  
*Stenopteryx hybridalis*. Generally distributed  
*Nola cuculatella*. *Darlington* and *Greatham*  
 — *cristulalis*. Generally common  
*Scoparia ambigua*. Generally distributed  
 — *ulmella*. Common in woods, etc., around *Hartlepool*  
 — *cembrae*. Common among coltsfoot  
 — *pyralis*. Generally common.  
 — *murana*. Common in the west of the county  
 — *lineola*. *Hoffal Wood*, near *Durham*  
 — *mercurella*. Common in *Upper Teesdale*  
 — *cratægella*. Common in *Upper Teesdale*  
 — *trunciolella*. Common in *Upper Teesdale*  
 — *angustea*. *Hartlepool*

## CRAMBITES

- Crambus pratellus*. Abundant everywhere  
 — *hamellus*. *Hartlepool*, once or twice  
 — *pascuellus*. Very local  
 — *margaritellus*. Has been taken at *Wolsingham*  
 — *perlellus*. Occurs freely on a dry bank near *Hesleden church*  
 — *warringtonellus*. Occurs on *Greatham saltmarsh*, a low damp locality, totally different from that where *perlellus* is found. The specimens too are always smaller.  
 — *selasellus*. *Hell Kettles, Darlington*  
 — *tristellus*. Common generally  
 — *geniculeus*. Sand banks, *Hartlepool*  
 — *culmellus*. Very common  
 — *hortuella*. Very common  
*Chilo phragmitellus*. *Hell Kettles, Darlington*  
*Ancrastia lotella*. Sand banks, *Hartlepool*  
*Homæosoma nimbella*. Along the coast  
 — *crataella*. *Hartlepool*  
*Ephestia chauliella*. Recorded by Mr. Sang as bred from a larva found in a growing hazel nut. The larva feeds on dried fruits generally, and there may be a mistake. There is no other record.  
*Plodia interpunctella*. *Darlington* and *Hartlepool*  
*Phycis genistella*. Once in *Upper Teesdale*  
 — *carbonariella*. *Wolsingham* and *Hartlepool*  
 — *dilutella*. Near *Darlington*

- Phycis genistella*. Bred from larvæ found near *Wolsingham*  
 — *roborella*. *Darlington*  
*Dioryctria spendidella*. Once at *Hartlepool*  
*Rodophæa advenella*. *Darlington*  
 — *tumidella*. *Hesleden Dene*  
*Onocera ahenella*. *Black Hall Rocks*  
*Aphomia colonella*. One at *Hartlepool* in 1874

For the remainder, the arrangement of Stainton's *Manual* will be followed.

## CHLÆPHORIDÆ

- Chloephora prasinana*. Generally common in woods.

## TORTRICINA TORTRICIDÆ

- Sarrothripa revayana*. One at *Hartlepool*  
*Amphisa gerningana*. On moors in the west  
 — *prodromana*. Abundant on the moors and on coast sand hills  
*Hypermeia angustana*. The true *angustana* was first taken at *High Force, Upper Teesdale*, in 1866, by Lord Walsingham. It has been taken there by others subsequently, and also at *Darlington* and *Hartlepool*  
 — *cruciana*. Common amongst shallows  
*Eulia ministrana*. Woods and denes  
*Brachytænia semifasciana*. *Castle Eden Dene*  
*Antithesia corticana*. On birch trunks, not uncommon  
 — *betuletana*. *Hesleden Dene*  
 — *prælongana*. Generally distributed, but not common  
 — *cynosbatella*. Common  
 — *pruniana*. Common  
 — *dimidianana*. Boggy places in the west  
 — *marginana*. *Teeside* near *Darlington*, etc.  
 — *palustrana*. *Upper Teesdale*  
*Penthina salicella*. *Darlington*  
*Clepsis rusticana*. Boggy moors in the west  
*Tortrix icterana*. Generally distributed, but not very common  
 — *viburnana*. Swarms on the moors in *Upper Teesdale*, etc.  
 — *viridana*. Common everywhere  
 — *forsterana*. *Darlington, Hartlepool*, etc.  
 — *heparana*. Generally common  
 — *ribeana*. Generally common  
 — *cinnamomeana*. *Darlington*  
 — *corylana*. Generally common

## PLICATÆ

- Lozotaenia sorbiana*. *Hell Kettles*, near *Darlington* and *Wolsingham*  
 — *musculana*. Generally common  
 — *latiorana*. This, I presume, is but a variety of *costana*, but being given separately in Stainton, I give it separately here. Mr. Gardner took a single specimen at *Greatham*  
 — *costana*. Common in marshy places  
 — *unifasciana*. Common among privet  
 — *fulvana*. Common generally  
 — *roborana*. Common generally



# INSECTS

*Lozotænia xylostæana*. Common generally  
 — *rosana*. Common generally  
*Ditula angustiorana*. *Darlington*  
*Ptycholoma lecheana*. Common generally  
*Notocelia udmanniana*. Recorded only from  
*Durham* and *Hartlepool*, but probably common generally  
*Pardia tripunctana*. Swarms in gardens  
*Spilonota roborana*. *Hartlepool*  
 — *rosæcolana*. *Darlington* and *Hartlepool*  
 — *trimaculana*. Common among elm  
 — *amœnana*. On the coast among *Rosa spinosissima*  
*Lithographia compoliliana*. Common among willows  
 — *cinerana*. *Darlington*  
 — *nisella*. Larvæ common in willow catkins.  
 — *penkleriæ*. Among birch  
*Phlæodes tetraquetra*. Abundant among birch  
 — *crenana*. Mr. Sang found this insect at *Waskerley*  
*Pædisca piceana*. *Wolsingham*, *High Force*, and *Thorp Bulmer* near *Hartlepool*. Probably in other marshy places  
 — *stabilana*. *Hell Kettles* near *Darlington*  
 — *solandriana*. Common among birch  
 — *ophthalmicana*. On black poplar in *Castle Eden Dene*  
*Catoptria scopoliæ*. Common among thistles  
 — *fulvana*. *Hesleden Dene*  
 — *hohenwarthiana*. Generally distributed, but not common  
 — *expallidana*. *Darlington*  
*Halonota bimaculana*. Generally distributed, but not common  
 — *trigeminana*. *Seaton Carew*  
 — *cirsiana*. Among thistles and centaurea.  
 — *scutulana*. Among thistles and centaurea.  
 — *grandævana*. Confined as a British species to *South Shields* and *Hartlepool*. I believe it is extinct at *South Shields*, but it still occurs about *Hartlepool*  
 — *brunnichiana*. Plentiful amongst coltsfoot. A curious variety, without the white spot on the forewings, was common in a quarry in *Hesleden Dene* a few years ago. The coltsfoot disappeared there and the insect with it, nor have I seen the variety since  
 — *tetragonana*. Very local. *Wolsingham*, *Darlington*, *Hesleden Dene*. The larvæ is said to be found under moss at the roots of beech trees. Mr. Gardner bred a specimen from a larva found on *Lotus corniculatus*  
 — *turbidana*. 'Teeside from *Coniscliffe* to *Blackwell*.' (J. Sang)  
 — *inopiana*. Taken at *Seaton Carew* in 1874 by the late John Sang  
 — *fœnella*. *Hesleden Dene*, once or twice  
*Dicrorampha petiverella*. *Darlington* and *Hartlepool*  
 — *politana*. *Eggleson*, *Upper Teesdale*  
 — *alpinana*. Mr. Sang took this southern species at *Coniscliffe*  
 — *tanacetæ*. *Coniscliffe*, *Darlington*, and near *Hartlepool*  
 — *plumbagana*. *Hartlepool*  
 — *acuminatana*. *Coniscliffe Moor*, *Darlington*, and *Hartlepool*

*Dicrorampha consortana*. *Darlington*  
*Coccyx hyrciniana*. *Coniscliffe Moor*  
*Capua ochraceana*. *Eggleson*, *Upper Teesdale*  
*Cartella bilunana*. *Hesleden Dene*

## ANCHYLOPERIDÆ

*Hedya paykulliana*. *Wolsingham* and *Hesleden Dene*  
 — *ocellana*. *Darlington* and *Coniscliffe Moor*  
 — *dealbana*. *Dinsdale Wood* and *Neasham Lane* near *Darlington*, and in *Hesleden Dene*  
 — *neglectana*.  
 — *aceriana*. Gas lamps, *Darlington*, by Mr. Sang in 1860  
 — *trimaculana*. I know of no record for this insect and never met with it, but it is certain to occur  
*Steganoptycha nævana*. *Castle Eden Dene* and *Cockerton* near *Darlington*  
 — *geminana*. *Wolsingham*  
*Anchylopera mitterbacheriana*. *Gibside*, and probably elsewhere  
 — *biarcuana*. *Winch Bridge*, *Upper Teesdale*, near *Darlington*, and probably elsewhere  
 — *myrtillana*.  
 — *lundana*. *South Shields*, *Sunderland*, *Barnard Castle*, and *Hartlepool*, probably everywhere  
 — *paludana*. Meyrick limits the range of this species to the fens of Norfolk and Cambridge, but Mr. Sang took it at *Hell Kettles* near *Darlington*  
 — *comptana*. Chiefly a chalk down species, but extending on the west coast to Cheshire. Mr. Sang took it in a lane near *Darlington* in 1859, but never met with it again. It may only have been a stray specimen  
 — *unguicella*. On the moors in the west. Has been taken at *Wolsingham* and on the *Teesdale Moors*  
*Bactra lanceolana*. Abundant among rushes  
*Argyrotoza conwayana*. Generally among privet, but not a common insect  
*Dictyopteryx contaminana*. Very common by hedge sides  
 — *lœflingiana*. Lanes and woods  
*Croesia bergmanniana*. Common everywhere among rose  
 — *forskaleana*. Common among maple  
 — *holmiana*. Generally common  
*Hemerostia rheediella*. Not scarce, has been recorded at *Sunderland*, *Darlington*, and *Hartlepool*

## PERONEIDÆ

*Cheimatophila mixtana*. Rather common in heathery places. Is recorded from *Waskerley*, *Wolsingham*, and the *Teesdale Moors*  
*Oxygrapha literana*. Mr. Sang took this at *Eggleson* and near *Darlington*; I took a single specimen at *Hartlepool*, and Mr. Gardner another near the mouth of *Castle Eden Dene*  
*Peronea schalleriana*. Generally common.  
 — *perplexana*. Of this comparatively new species Mr. Gardner took two at *Greatham*, near *Hartlepool*  
 — *commariana*. Mr. Gardner took a single specimen of this on the *Teesdale Moors*

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- Peronea comparana*. Generally common  
 — *tristana*. This insect has occurred at *Gibside* and at *Darlington*, both records being sixty or seventy years ago. I know of no recent occurrence  
 — *rufana*. Has occurred very generally, and in places such as *Hartlepool* sand hills, where there is neither poplar nor willow  
 — *favillaceana*. *Hesleden Dene*, etc.  
 — *maccana*. *Upper Tynedale*  
 — *hastiana*. *Black Hall Rocks* among dwarf willow, and *Cole Hill Wood* near *Hartlepool*  
 — *umbrana*. Taken by Mr. Maling in 1875 in *Thornley Dene* in the valley of the *Derwent*  
 — *variegana*. Very common everywhere  
*Paramesia aspersana*. Generally distributed and common  
 — *ferrugana*. Generally distributed and common  
 — *caledoniana*. Common on the moors of *Upper Teesdale*  
*Teras caudana*. Generally common among willows

## STIGMONOTIDÆ

- Pœcilochroma corticana*. Well distributed, but not very common  
 — *bouchardana*. Among fir trees  
 — *tenerana*. *Coniscliffe Moor*, near *Darlington*, and once in *Hesleden Dene*  
*Anisotænia ulmana*. Has only been taken in *Hesleden Dene* by Mr. Gardner, but is certain to occur elsewhere  
*Semasia populana*. I found larvæ and bred this insect at *Hartlepool* in 1884  
 — *woeberana*. *Darlington*, in gardens  
 — *rufillana*. Common in the south of *Durham*, though limited to *York* by Mr. Meyrick  
 — *nanana*. Among spruce fir in *Teesdale*  
 — *vacciniana*. Has only been met with at *Wolsingham*  
*Eucelis aurana*. *Castle Eden Dene* and the railway cutting north of *Hart station*  
*Ephippiphora regiana*. *Eggleson, Upper Teesdale*, and *Hesleden Dene*; probably all woods where there is sycamore  
 — *argyrana*. Generally distributed among oaks  
*Stigmonota internana*. Among whins as far as *Castle Eden*. I do not know if it occurs further north. Meyrick limits it to *York*  
 — *perlepidana*. *Darlington* (J. Sang). The reputed food plants *Orobis niger* (Wilk) and *Lathyrus macrorrhizus* (Meyr) do not grow in the county  
 — *dorsana*. Railway banks near *Croft*. Sang bred this species from larvæ found on *Lathyrus sylvestris*. Meyrick says *Lathyrus macrorrhizus* and perhaps *L. pratensis*. This gives an additional food, on which perhaps *Perlepidana* also feeds  
*Asthenia coniferana*. Mr. Sang bred this insect from larvæ in bark of Scotch fir. (*Ent. W. Intell.* vii. 76)  
 — *splendidulana*. Occurs around *Darlington* and in *Upper Teesdale*  
*Retinia pinicolana*. Has only been taken near *Darlington*

- Retinia pinivorana*. *Coniscliffe Moor* and near *Darlington*  
 — *occultana*. *Castle Eden Dene, Edder Acres*, and near *Darlington*  
*Pamplusia monticolana*. This insect occurs freely on the moors in *Northumberland* and in *Yorkshire*, and is certain to occur in *Teesdale*, but I know of no records

## CARPOCAPSIDÆ

- Endopisa ulicana*. On railway banks at *Darlington* and *Hartlepool*  
 — *germarana*. Meyrick limits the range of this species to *York*, but it certainly reaches *Durham*, for Mr. Sang took it in a lane near the railway at *Darlington*  
 — *nigricana*. Mr. Sang reared this insect from larvæ found at *Coniscliffe* feeding on *Vicia sylvatica*. This is not the food generally named  
 — *proximana*. Probably the same species as *nigricana*. Occurring at the same place and time  
*Carpocapsa splendana*. Near *Darlington*  
 — *pomonella*. No records except at *Hartlepool*, and these are probably from apples grown elsewhere, as no apple trees grow there now  
*Grapholita albersana*. Bred by Mr. Sang from larvæ found near *Darlington*. (*E.M.M.*, vi. 170)  
 — *ulicetana*. Swarms everywhere around whin  
 — *hypericana*. Common in *Castle Eden* and *Hesleden Dene*, and probably elsewhere among *Hypericum*

## CNEPHASIDÆ

- Cnephasia hybridana*. Among fir trees, not uncommon  
 — *subjectana*. Generally common  
 — *virgaureana*. " "  
 — *alternella*. Rather local and only recorded from *Darlington* and *Seaton Carew*  
 — *conspersana*. Generally distributed  
 — *octomaculana*. Only recorded around *Hartlepool*, but certain to occur elsewhere  
*Ablabia pratana*. Rough pastures and moors. Very plentiful where it occurs. On the wing about mid-day and later

## SERICORIDÆ

- Euchromia ericetana*. I took this species regularly in my garden at *West Hartlepool*, some twenty years ago. The garden was surrounded by fields, &c. There is no other record  
 — *striana*. *Middleton-One-Row* and *Greatham*  
*Orthotænia antiquana*, *Hell Kettles* near *Darlington*  
*Sericoris conchana*. *Castle Eden Dene, Darlington*, &c.  
 — *lacunana*. Generally common  
 — *urticana*. Plentiful in most places  
 — *micana*. In boggy places near *Darlington, Hartlepool*, &c.  
 — *cespitana*. I know of no records except near *Hartlepool*  
 — *politana*. Moors in the west of the county



## INSECTS

*Sericoris bifasciana*. The late John Sang took this species near *Darlington* in 1870 and again in 1872, according to his diary  
*Mixodia schultzi*ana. Boggy places on the moors in the west of the county  
 — *palustrana*. Mr. Gardner found this insect abundant in one locality on the *Teesdale Moors*. I do not know any other English habitat.

### LOZOPERIDÆ.

*Phtheochroa rugosana*. *Dinsdale Wood* and *Coniscliffe*. The food plant *Bryonia dioica* only grows in extreme *South Durham*  
*Eriopsela fractifasciana*. A single specimen was taken by Mr. Gardner at *Black Hall Rocks*  
 — *quadrana*. Taken in 1896 by Mr. Gardner at *Winch Bridge, Upper Teesdale*. This is, perhaps, its most northern habitat  
*Chrosia tessera*na. Has only been taken near *Darlington*. The food plant scarcely occurs in the county  
*Argyrolepis baumanniana*. Generally distributed and not uncommon  
 — *subbaumanniana*. Only taken by Mr. Sang nearly fifty years ago  
 — *badiana*. Among burdock in the denes

*Argyrolepis cnicana*. Rather common amongst thistles  
*Calosetia nigromaculana*. *Hartlepool*, on the railway side, among ragwort  
*Eupœcilia maculosana*. Taken by Mr. Sang, probably only a casual, as the insect does not occur so far north  
 — *atricapitana*. *Darlington, Hartlepool, &c.*, among ragwort  
 — *nana*. *Wolsingham* is the only district where this has occurred  
 — *angustana*. Common about *Hartlepool*. No other records  
 — *rupicola*. Only in *South Durham, Hesleden Dene, and Darlington*  
 — *vectisana*. *Greatham saltmarsh*, very plentiful  
 — *manniana*. Occurred on the railway banks at *Darlington*  
 — *affinitana*. Occurs at *Greatham saltmarsh*, the larvæ feeding on *Aster tripolium*  
 — *ruficiliana*. Common among cowslips at *Darlington, Hartlepool, &c.*  
*Lozopera straminea*. Generally common  
*Xanthosetia hamana*. Generally distributed, but not very abundant  
 — *zœgana*. Generally distributed, but not very abundant  
*Tortricodes hyemana*. Common in oak woods

### TINEINA

This group has been very little collected in Durham. The following list has been compiled principally from notes left by the late John Sang, which appear to have been memoranda for future guidance rather than a regular diary, and from a list supplied by Mr. John Gardner, F.E.S., of his own captures. Stainton's *Manual* has references to '*Da,*' *Darlington*, but as these referred rather to the residence of the captor than to the actual place where the species were found I have added Stainton's *Manual*, in all cases where I have no other knowledge of its occurrence. Sang, who, I believe, supplied Stainton with the list, collected in Yorkshire—as far as Richmond inland, and down the coast to Redcar and Saltburn, and it is possible that some of these references ought to have been in the Yorkshire list. No one has collected the Tineina in North Durham since the late George Wailes, and his records are given in the *Manual* as '*Ne,*' Newcastle, so that it is impossible now to say which were Durham species, and which Northumberland.

### EXAPATIDÆ

*Exapate gelatella*. Generally common  
*Chimabacche phryganella*. In woods, but not common  
 — *fagella*. Abundant everywhere. Dark forms often occur, but not so black as those I have seen at *Liverpool* and elsewhere  
*Semioscopis avellanella*. Occurs in *Upper Teesdale*. Not common  
 — *steinkellneriana*. The *Manual* gives *Darlington*, but Sang does not appear to have met with it. I took a single specimen near the workhouse, *Hartlepool*, many years ago

### TINEIDÆ

*Talæporia pseudo-bombycella*. *Barnard Castle* and *Castle Eden Dene*  
*Solenobia clathrella*. This insect was found by Dr. Mason in a small collection formed by

John Sang, and purchased at his death by Dr. Mason. They were all taken after Sang's return to *Darlington*, and these (two ♂s and three ♀s) were there named *Triquetrella*, as *Clathrella* had never been recorded as British. Dr. Mason wrote me of his discovery that they were a new species as soon as he had satisfied himself. There is an incorrect reference to these specimens in Tutt's work (vol. ii. 197). The synonymy of the genus is much confused  
*Diplodoma marginepunctella*. Sang found cases of this insect 'low down on tree trunks' near *Darlington*  
*Ochsenheimera birdella*. Taken by Mr. Gardner near the mouth of *Hesleden Dene*  
 — *bisontella*. Found by Mr. Gardner with the last, and also in *Teesdale* by Mr. Sang  
 — *vacculella*. Found by Mr. Gardner with the last, and also in *Teesdale* by Mr. Sang



# A HISTORY OF DURHAM

*Euplocamus boleti*. I took a single specimen of this insect in my own house in *Hartlepool* in 1862

- Tinea rusticella*. Generally common  
 — *fulvimitrella*. *Teesdale* and *Hesleden Dene*  
 — *tapetzella*. Generally common  
 — *arcella*. *Middleton-One-Rock* and *Hesleden Dene*  
 — *picarella*. A very rare insect. Bred by Mr. Gardner from fungi in *Upper Teesdale*  
 — *corticella*. Taken by the late W. Backhouse in *Kepier Wood* near *Durham*  
 — *parasitella*  
 — *granella*. Common in granaries  
 — *cloacella*. Common  
 — *albipunctella*. *Darlington* and *Seaton Carew*  
 — *confusella*. I took a single specimen of this insect on the wing near the mouth of *Hesleden Dene*  
 — *miscella*. *Castle Eden Dene* and *Black Hall Rocks*  
 — *pellionella*. Common in houses  
 — *pallescentella*. Common generally, especially in timber yards  
 — *lapella*. *Darlington* (*Stainton's Manual*). Mr. Gardner bred it from a bird's nest found in *Hesleden Dene*  
 — *biselliella*. Very common in houses  
 — *semifulvella*. Birds' nests and in houses  
 — *bistrigella*. Generally distributed  
*Lampronia quadripunctella*. Not uncommon in *South Durham*  
 — *luzella*. *Darlington*, *Castle Eden* and *Hesleden Denes*  
 — *prælatella*. Local, but plentiful where it occurs  
 — *rubiella*. Common among both wild and garden raspberries  
*Teichobia verhuellella*. Mr. Sang found this both at *Castle Eden* and *Black Halls*, and reared it from larvæ found there  
*Incurvaria musculella*. Generally common  
 — *canariella*. Taken by Mr. Gardner among *Rosa spinosissima*  
 — *pectina*. *Teesdale*, among birch. Not very common  
*Nemophora swammerdamella*. General in plantations  
 — *schwarziella*. General in plantations  
*Adela fibulella*. *Darlington*, *Castle Eden Dene*, and *Hartlepool*  
 — *rufimitrella*. Generally distributed  
 — *viridella*. *Darlington*. Common in the denes  
 — *cuprella*  
*Nematois cupriacellus*. *Darlington*

## MICROPTERYGIDÆ

- Micropteryx calthella*. Common  
 — *seppella*. Common  
 — *allionella*. *Wolsingham*  
 — *thunbergella*. *Darlington*  
 — *purpurella*  
 — *albicella*. *High Force*  
 — *semipurpurella*. *Teesdale*. Common in *Hesleden Dene*  
 — *argyrella*. *Darlington*

- Micropteryx unimaculella*. *Teesdale*  
 — *sparmannella*. *High Force*  
 — *subpurpurella*. Generally distributed  
*Swammerdamia apicella*. *Darlington*, *Hesleden Dene*, etc.  
 — *cæsiella*. *Darlington* (*Stainton's Manual*)  
 — *griseo-capitella*. *Darlington*, *Wolsingham*, *Hesleden Dene*  
 — *lutarea*. *Darlington*, *Whessoe*, etc.  
 — *pyrella*. *Darlington*, *Hesleden Dene*  
*Hyponometa padellus*. *Teesdale* and *Weardale*  
 — *evonymellus*. Among spindle near *Hartlepool*  
 — *padi*. Not uncommon  
*Anesychia funerella*. *Barnard Castle*  
*Prays curtisellus*. Common in woods

## PLUTELLIDÆ

- Plutella cruciferarum*. Common. This sometimes appears in myriads  
 — *porrectella*. General in gardens  
 — *annulatella*. *Hartlepool*  
 — *dalella*. *Waskerley*  
*Cerostoma sequella*. *Teesdale*  
 — *radiatella*. Common  
 — *costella*. Common  
 — *lucella*. *Darlington*, among young oaks  
 — *scabrella*. Generally common  
 — *nemorella*. *Castle Eden* and *Hesleden Denes*  
 — *xylostella*. Generally common

## GELECHIDÆ

- Orthotelia sparganella*. *Hell Kettles*  
*Anacamptis sangiella*. *Darlington*  
*Phibalocera quercana*. *Darlington* (*Stainton's Manual*)  
*Exæretia allisilla*. *Hartlepool* and *Durham*  
*Depressaria costosa*. Generally distributed  
 — *liturella*. Generally distributed  
 — *umbellana*. Generally distributed  
 — *assimilella*. *Darlington* (*Stainton's Manual*)  
 — *nanatella*. *Hartlepool*  
 — *atomella*. *Darlington*  
 — *arenella*. *Darlington*, *Castle Eden* and *Hesleden Denes*  
 — *subpropinquella*. *Black Halls*  
 — *alstræmeriella*. Common among hemlock  
 — *conterminella*. *Darlington*  
 — *hypericella*. *Darlington*, *Hartlepool*, and the denes. Common among *Hypericum*  
 — *angelicella*. *Darlington*, *Hartlepool*, and the denes  
 — *ocellana*. *Darlington* (*Stainton's Manual*)  
 — *applanata*. Very common  
 — *ciliella*  
 — *pulcherrimella*. *Teesdale*, *Darlington*, and the denes  
 — *weirella*. *Teeside*  
 — *chærophylli*. *Darlington*  
 — *nervosa*. *Greatham*  
 — *badiella*. *Darlington*  
 — *pastinacella*. *Greatham*  
 — *heracliana*. Generally common  
*Gelechia cinerella*. Generally common  
 — *rufescens*. *Greatham*, *Seaton Carew*  
 — *populella*  
 — *ericetella*. Common on the moors

# INSECTS

- Getchia mulinella*. Generally distributed  
 — *longicornis*. *Wolsingham*  
 — *terrella*. Generally common  
 — *desertella*. *Shields, Hartlepool, Seaton Carew*,  
     probably on all coast sandhills  
 — *politella*. *Teesdale, Hartlepool*  
 — *intaminatella*. *Darlington*  
 — *accuminatella*. Generally common  
 — *gracilella*. *South Shields*  
 — *senectella*. *Greatham*  
 — *obscurella*. *Crimdon Cut*  
 — *similis*. *Crimdon Cut*  
 — *affinis*. *Teesdale*  
 — *tetragonella*. A new species, taken at *Greatham*  
     by Mr. Sang. It has been erroneously  
     recorded as occurring at *Redcar* (Yorks.)  
 — *umbrosella*. *South Shields*  
 — *rhombella*. Common in crab-apple. The  
     insects are very dark grey, none light like  
     those in the south.  
 — *proximella*. *Teesdale and Hesleden Dene*  
 — *notatella*. *Darlington and Hesleden Dene*  
 — *vulgella*. *Darlington and Hesleden Dene*  
 — *fugitivella*. *Darlington*  
 — *æthiops*. *Teesdale and Weardale*  
 — *solutella*. *Wolsingham*  
 — *distinctella*. *South Shields*  
 — *celerella*. *Hartlepool*. Rare  
 — *maculea*. *Darlington and Hesleden Dene*  
 — *tricolorella*. *Darlington*  
 — *fraternella*. *Darlington and Hartlepool*  
 — *viscariella*. *Darlington and Hesleden Dene*  
 — *marmorea*. *Castle Eden, Black Halls, Seaton*  
     *Carew*. On the sea banks, probably all  
     along the coast  
 — *instabilella*. *Black Halls, Hartlepool, Greatham*  
 — *salicorniæ*. *Greatham Salt marsh*  
 — *atripicella*. *Greatham and Hartlepool*  
 — *obsoletella*. *Darlington, Greatham, and Seaton*  
     *Carew*  
 — *plantaginella*. *Greatham*. Plentiful  
 — *sequax*. *Castle Eden to Hartlepool*  
 — *mouffetella*. *Darlington*  
 — *dodecella*. *Darlington and Cole Hill*  
 — *tenebrella*. *Darlington and Wolsingham*  
 — *tenebrosella*. *Darlington*  
 — *ligulella*. *Darlington and Greatham*  
 — *vorticella*. *Darlington*  
 — *tæniolella*. *Darlington (Stainton's Manual)*  
 — *sircomella*. *Darlington*  
 — *anthyllidella*. *Darlington and Greatham*  
 — *sangiella*. *Darlington and Hartlepool*  
 — *albipalpella*. *Darlington*  
 — *atrella*. *Darlington, Castle Eden and Hesleden*  
     *Denes*  
 — *intaminella*. *Darlington and Wolsingham*  
 — *næviferella*. *Darlington and Barnard Castle*  
 — *hermanella*  
 — *pictella*. Railway bank, *Hartlepool*  
 — *osseella*. *Darlington*  
 — *brizella*. *Greatham*  
 — *subocella*. *Hesleden Dene*  
*Parasia lappella*  
 — *metzneriella*. *Darlington, Seaton Carew, and*  
     *Hartlepool*  
 — *carlinella*. *Darlington (Stainton's Manual)*

- Chelaria hubnerella*. *Castle Eden and Hesleden*  
     *Denes*  
*Ypsolophus marginellus*. Among juniper in the  
     dales  
*Sophronia humerella*. *Castle Eden Dene*  
*Pleurota bicostella*. *High Force*  
*Harpella bracteella*. This species was recorded as  
     British in the E. W. I. (iii. 179) from  
     specimens taken and bred at Shotley near  
     Gateshead, and I took a beautiful specimen  
     at light near *Throston, Hartlepool* in June 1880.  
     It is therefore widely spread in the county,  
     but not enough is known of its habits for it  
     to be often taken. I believe less than a  
     dozen British specimens exist, all from  
     Durham but one. The larva feeds on rotten  
     wood

*Hypercallia christiennella*. *Castle Eden Dene*

## CECOPHORIDÆ

- Dasycera sulphurella*. Generally common about  
     old hedges  
*Cecophora flavimaculella*. *Darlington, Castle Eden*  
     *and Hesleden Denes*  
 — *similella*. High land in west of county, *Wol-*  
     *singham, Eggleston*, etc.  
 — *subaquilella*. High land in west of county.  
     One at *Black Halls*  
 — *pseudospretella*. Swarms everywhere. I once  
     had larvæ brought me from *Stockton-on-Tees*,  
     where they had been feeding on flour in  
     casks. I expected to rear *Kuhniella*, but  
     this species only emerged  
*Endrosis fenestrella*  
*Butalis fuscocuprea*. *Darlington*  
 — *incongruella*. *Waskerley*  
*Atemelia torquatella*. *Wolsingham, Castle Eden and*  
     *Hesleden Denes*  
*Pancalia lewenhoekella*. *Wolsingham, Castle Eden*  
     *and Hesleden Denes*

## GLYPHIPTERYGIDÆ

- Acrolepia granitella*. *Darlington*  
 — *betuletella*. This rarity was first taken at  
     *Castle Eden Dene*, and has only been met  
     with there and once at *High Force*. Most  
     of the specimens in existence were taken by  
     the late John Sang. I have taken it but  
     once, my specimen being beaten out of yew  
     in October  
*Glyphipteryx fuscoviridella*. *Black Halls, dry*  
     banks  
 — *cladiella*. *Darlington*  
 — *thrasonella*. *Darlington, Hesleden Dene, etc.*  
 — *fischeriella*. *Darlington, Hartlepool, etc.*  
*Tinagra staneellum*. *Darlington*  
 — *resplendellum*. *Darlington, at Hell Kettles*  
*Douglasia ocnorostomella*. *Darlington*

## ARGYRESTHIDÆ

- Argyresthia ephippella*. *Darlington, common*  
 — *nitidella*. Very common  
 — *semitestacella*. Generally distributed  
 — *spiniella*. *High Force*  
 — *albiastris*. Not scarce among sloe



# A HISTORY OF DURHAM

- Argyresthia conjugella.* Teesdale, etc.  
 — *semifusca.* Darlington, Hesleden Dene  
 — *mendica.* Darlington (Stainton's Manual)  
 — *retinella.* Darlington, Castle Eden Dene  
 — *dilectella.* High Force, among juniper  
 — *curvella.* Cole Hill near Hartlepool  
 — *sorbiella.* Wolsingham and Teesdale  
 — *pygmælla.* Darlington, Edder Acres, Hesleden Dene, etc.  
 — *goedartella.* Darlington, Hartlepool, etc.  
 — *brockeella.* Generally distributed among birch  
 — *arceuthinella.* Wolsingham, among juniper  
*Cedestis farinatella.* Darlington  
*Ocnerostoma piniariella.* Woods near Darlington, Hartlepool, etc.  
*Zellaria hepariella.* Darlington, Castle Eden Dene, etc.  
 — *insignipennella.* Probably the same as last, occurring at same places  
*Gracillaria swederella.* Generally common  
 — *stigmatella.* Darlington  
 — *stramineella.* Upper Teesdale  
 — *elongella.* High Force, Darlington, Castle Eden, Black Halls, etc.  
 — *tringipennella.* Generally distributed  
 — *syringella.* Generally distributed  
 — *aurogutella.* Darlington, Castle Eden and Hesleden Denes  
*Coriscum cuculipennellum.* Castle Eden Dene  
*Ornix avellanella.* Darlington, Hesleden Dene  
 — *anglicella.* Darlington, Hesleden Dene  
 — *betulæ.* Wolsingham, High Force  
 — *torquillella.* Darlington  
 — *scoticella.* Barnard Castle  
 — *loganella.* Wolsingham and Hesleden Dene  
 — *guttea.* Darlington

## COLEOPHORIDÆ

- Coleophora tengstromella.* Darlington, Seaton Carew  
 — *laricella.* General among larch  
 — *lutipennella.* Darlington, Barnard Castle, etc.  
 — *fuscedinella.* Darlington (Stainton's Manual)  
 — *viminetella.* Darlington, Hartlepool  
 — *siccifolia.* Darlington  
 — *gryphipennella.* Darlington, Hartlepool, probably everywhere on rose  
 — *nigricella.* Darlington  
 — *orbitella.* High Force, Stanhope, Wolsingham, etc.  
 — *paripennella.* High Force  
 — *albitarsella.* Darlington, Hesleden Dene  
 — *alcyonipennella.* Stockton-on-Tees, Castle Eden, etc.  
 — *frischella.* Darlington, Hartlepool, etc.  
 — *fabriciella.* Darlington  
 — *anatipennella.* Darlington  
 — *albicosta.* Darlington, Wolsingham  
 — *pyrrhulipennella.* Wolsingham  
 — *lixella.* Castle Eden Dene and Black Halls  
 — *discordella.* Generally distributed  
 — *onosmella.* Darlington  
 — *therinella.* Darlington, Black Halls  
 — *trogodytella.* Darlington, Crindon Cut, etc.  
 — *apicella.* Darlington  
 — *annulatella.* Darlington, Castle Eden, and Black Halls  
 — *murinipennella.* Darlington, Greatham  
 — *glaucicolella.* Greatham  
 — *capitellula.* Darlington

## ELACHISTIDÆ

- Bidella somnulentella.* Generally distributed  
*Batrachedra preangusta.* Darlington, Castle Eden and Hesleden Denes  
 — *pinicolella.* Coniscliffe Moor  
*Oinophila v-flava.* Wine cellar in Darlington  
*Chauliodus chærophyllellus.* Generally common  
*Laverna propinquella.* Coniscliffe Moor, Castle Eden and Hesleden Denes, &c.  
 — *lacteella.* Darlington, Dinsdale, Hesleden Dene  
 — *miscella.* Black Halls  
 — *ochraceella.* Rather common  
 — *atrai.* Rather common  
*Chrysoclysta shrankella.* Hesleden Dene  
 — *flavicaput.* Darlington, Greatham, Hesleden Dene  
*Asychnia profugella.* Darlington  
 — *terminella.* Castle Eden  
*Chrysocorys festaliella.* High Force, on wild raspberries  
*Stephensia brunnichella.* Generally distributed  
*Elachista trapeziella.* Barnard Castle  
 — *gleichenella.* Barnard Castle  
 — *apicipunctella.* Darlington, Crindon Cut  
 — *albifrontella.* Generally common  
 — *cinereopunctella.* Stockton-on-Tees  
 — *luticomella.* Darlington, Stockton, Hesleden Dene, &c.  
 — *atricomella.* Darlington, Stockton, Hesleden Dene, &c.  
 — *kilmunnella.* Hartlepool  
 — *monticola.* Darlington and Teesdale  
 — *nigrella.* Darlington and Hesleden Dene  
 — *gregsoni.* Darlington  
 — *obscuraella.* Darlington, var. *subobscuraella.*  
 The type occurs in Teesdale commonly  
 — *perplexella.* Generally distributed  
 — *adscitella.* Darlington, Stockton, Castle Eden, &c.  
 — *megerella.* Darlington, Castle Eden, &c.  
 — *zonariella.* Generally common  
 — *tæniatella.* Darlington, &c.  
 — *cerusella.* Darlington (Stainton's Manual)  
 — *rhyncosporella.* Darlington and Hartlepool  
 — *paludum.* Hell Kettles  
 — *biatomella.* Darlington  
 — *triatomea.* Darlington, Greatham, &c.  
 — *pollinariella.* Darlington, Castle Eden and Hesleden Denes  
 — *subocellea.* Castle Eden  
 — *rufocinerea.* Abundant everywhere  
 — *cygnipennella.* Abundant everywhere  
*Tischeria complanella.* Generally distributed  
 — *marginella.* Darlington

## LITHOCOLLETIDÆ

- Lithocolletis amyotella.* Darlington  
 — *roboris.* Darlington  
 — *sylvella.* Darlington  
 — *cramerella.* Darlington, Hesleden Dene  
 — *heegeriella.* Darlington, Barnard Castle  
 — *alnifoliella.* General among alder  
 — *nigrescentella.* Darlington



# INSECTS

*Lithocolletis insignitella*. Very abundant between *Hart Station* and *Castle Eden*, but not recorded elsewhere in England. It is so very plentiful that I have collected 1,000 mines within twenty yards. It feeds here only on *Trifolium pratense*, though medium and repens are common. The insect occurs by hedges or waste ground, and is especially common on the railway side

- *irradiella*. *Darlington*
- *bremiella*. *Darlington, Barnard Castle, &c.*
- *ulmifoliella*. Generally common
- *spinolella*. Generally common
- *sorbiella*. *Upper Teesdale*
- *salicicolella*. *Black Halls*
- *pomifoliella*. *Darlington and Greatham*
- *spinicolella*. *Darlington and Hesleden Dene*
- *taginella*. *Darlington, Hesleden Dene and Teesdale*
- *coryli*. *Darlington, Barnard Castle, &c.*
- *vacciniella*. *Stockton-on-Tees*
- *quinqueguttella*. *Castle Eden and Black Halls*
- *quercifoliella*. Generally common
- *messaniella*. *Darlington (Stainton's Manual)*
- *scopariella*. *Teesdale and Coniscliffe Moor*
- *viminiella*. *Darlington*
- *corylifoliella*. Generally common
- *caledoniella*. *Darlington and Hesleden Dene*
- *nicellii*. *Darlington and Hesleden Dene*
- *dunningiella*. *Barnard Castle*
- *frolichiella*. *Stanhope, Darlington, Hartlepool.*  
Not common
- *stettinensis*. *Darlington (Stainton's Manual)*
- *Klemannella*. *Stanhope, Darlington, Edder Acres, &c.*
- *emberizæpennella*. *Darlington, Barnard Castle, Hesleden Dene, &c.*
- *tristrigella*. *Darlington, Hesleden Dene, &c.*
- *trifasciella*
- *compariella*. *Aycliffe*

## LYONETIDÆ

- Lyonetia clerkella*. Generally distributed.
- Cemiosoma spartifoliella*. *Darlington*
- *wailesella*. *Darlington*
  - *scitella*. *Darlington, Barnard Castle and Greatham*
- Opostega salaciella*
- *crepusculella*. *Darlington, Castle Eden, &c.*
- Bucculatrix aurimaculella*. *Darlington*

- Bucculatrix cidarella*. *Hell Kettles*
- *cratægi*. *Dinsdale Wood*
- *maritima*. *Greatham*

## NEPTICULÆ

- Nepticula atricapitella*. *Darlington*
- *ruficapitella*. *Darlington*
  - *pygmæella*. *Darlington, Castle Eden*
  - *pomella*. *Darlington*
  - *oxyacanthella*. *Darlington*
  - *viscerella*. *Darlington*
  - *aucupariella*. *Stanhope, Barnard Castle, &c.*
  - *lapponica*. *High Force, &c.*
  - *anomaella*. *Darlington*
  - *septembrella*. *Darlington, Castle Eden, &c.*
  - *cryptella*. *Darlington, Castle Eden, &c.*
  - *ulmivoriella*. *Darlington*
  - *subbimaculella*. *Darlington*
  - *argyropeza*. *Darlington*
  - *trimaculella*. *Darlington*
  - *salicis*. *Darlington*
  - *myrtillella*. *Barnard Castle*
  - *flosactella*. *Barnard Castle, Darlington*
  - *luteella*. *Barnard Castle, Darlington, Wolsingham, &c.*
  - *ignobilella*. *Darlington*
  - *arcuata*. *Darlington*
  - *angulifasciella*. *Darlington*
  - *atricollis*. *Darlington*
  - *microtheriella*. *Darlington, Barnard Castle*
  - *argentipedella*. Among birch in the west.  
*Wolsingham, High Force, Barnard Castle, &c.*
  - *betulicola*. General in the west
  - *plagicolella*. *Darlington, &c.*
  - *malella*. *Darlington*
  - *tityrella*. *Darlington, &c.*
  - *glutinosæ*. *Stanhope*
  - *gratiosella*. *Darlington, &c.*
  - *ulmivorella*. *Darlington, &c.*
  - *splendidellum*. *Darlington, &c.*
  - *regiella*. *Darlington, &c.*
  - *æniofasciella*. *Darlington, Castle Eden*
  - *alnetella*. *Darlington, Barnard Castle, Stanhope*
  - *marginicolella*. *Darlington*
  - *aurella*. *Darlington, &c.*
  - *splendidissima*. *Darlington*
- Trifurcula immundella*. *Darlington, &c.*
- *pulverosella*. *Darlington*

## PTEROPHORINA

These insects are now placed elsewhere and divided into other genera. I follow Stainton for convenience only.

- Adactyla bennetii*. Salt marsh at *Greatham*
- Pterophorus ochrodactylus*. *Tees Side, near Darlington*
- *bertrami*. *Low Coniscliffe*
  - *trigonodactylus*. Generally distributed and common
  - *parvidactylus*. *Black Halls*, very scarce, but abundant on the sides of the railway-cutting near *Hesleden Dene*
  - *hieracii*. *Darlington*
  - *bipunctidactylus*. *Darlington, Hesleden Dene, Edder Acres, &c.*
  - *plagiodactylus*. *South Shields, Black Halls, Darlington, &c.*

- Pterophorus fuscus*. *Castle Eden and Hesleden Denes, Darlington, &c.*
- *lithodactylus*. *Darlington, Edder Acres, Black Halls, &c.*
  - *pterodactylus*. *Darlington, Castle Eden, Durham, Hesleden Dene, &c.*
  - *microdactylus*. *Hesleden Dene, Black Halls, Crimdon Cut, &c.*
  - *tetradactylus*. *Darlington, Black Halls, &c.*
  - *pentadactylus*. Very common wherever convolvulus grows

## ALUCITINA

- Alucita polydactyla*. Common

# A HISTORY OF DURHAM

## DIPTERA

### *Flies*

In this county the two-winged flies have been neglected. The following list of species is the result of observations and collections made during the six years which formed the close of the nineteenth century and the beginning of the twentieth, before which time no collections had been made or records kept for this county. It is, therefore, very imperfect. But it shows that the county, with its great diversity of natural features, is the home of a large variety of flies.

Among the long grasses on the sand hills of the southern coast-line Asilidæ and Therevidæ lie waiting for their prey. Along the flower-clad cliff-tops bright Syrphids and more homely Anthomyids disport themselves in the sunshine. In the rush-lined gullies worn in the boulder clay, Leptidæ and the larger Crane flies abound, while on the beach, among the heaps of seaweed left by the receding tide are many species of shore flies, both the Fucellias, Orygma, Chersodromia, and others. The deep wooded denes, so characteristic of this part of the coast, are the haunts of swarms of sandflies and midges of many kinds. Farther inland, along the marshy flats through which runs the sluggish Skerne, and on the upland burns and among the rushes of the hill pastures, the water-loving Dolichopods skim over the streams and pools or lurk among the herbage. By the banks of the numerous brooks and rivers where willows hang over the waters, the black Bibio of St. Mark may be found, while its smaller relative of St. John and several other species swarm among the herbage. Along the field borders, and in the meadows or in the neglected corners, the numerous tribes of Acalypterous Muscids, hovering Syrphids, and indeed flies of almost every family, hide themselves beneath the leaves, or feed on the yellow pollen. The upper dales and the many glens which seam the hillsides are the resort of great numbers of the Limnobiidæ. And on the heathery moors the hum of the bright wasp-coloured Sericomymia mingles with that of the bees.

The county, therefore, with its considerable range of altitudes from the sea level to over 2,000 feet, and its varied topography and vegetation, is well calculated to possess a fairly wide range of insect life, notwithstanding its northern latitude, its eastern exposure, and its often smoke-laden atmosphere. The following lists of species probably give only a small proportion of those inhabiting the county.

### CECIDOMYIDÆ

The Gall Gnats of the county have not yet been studied, and although many species have been collected and the galls of many more observed, the names of the species have not been determined.

### MYCETOPHILIDÆ

The Fungus Gnats also have been but little worked out. The following very meagre list contains all that have as yet been identified.

Sciara præcox, Mg.	Lasiosoma luteum, Mcq.	Macrocera centralis, Mg.
Mycetophila punctata, Mg.	— hirtum, Mg.	— stigma, Curt.
— signata, Mg.	Sciophila ornata, Mg.	Bolitophila fusca, Mg.
— cingulum, Mg.	Macrocera fasciata, Mg.	— cinerea, Mg.
Glaphyroptera fascipennis, Mg.	— lutea, Mg.	

### BIBIONIDÆ

Several of this family are common throughout the county, especially the Fever Fly, and the black, heavy-looking St. Mark's Fly. Its red-legged cousin is not uncommon in the upper dales, and the smaller St. John's Fly and its woolly relative are generally to be found near wooded streams. This county is the only recorded locality for *D. femoratus*.

Scatopse notata, L.	Dilophus femoratus, Mg.	Bibio nigriventris, Hal.
— brevicornis, Mg.	Bibio pomonæ, F.	— laniger, Mg.
Dilophus febrilis, L.	— marci, L.	— johannis, L.

# INSECTS

## SIMULIDÆ

Reptans is the only common species of the Sandflies, and is sometimes to be met with in countless swarms in the coast dunes.

*Simulium reptans*, L.

*Simulium latipes*, Mg.

## CHIRONOMIDÆ

The beautiful and delicately-coloured members of the Midge family are everywhere present. The local species are very numerous, but the difficulty of preserving their colours and the confused state of the British list render their identification difficult.

*Chironomus plumosus*, L.

— *annularis*, Deg.

— *flaveolus*, Mg.

— *venustus*, Stæg.

— *pedellus*, Deg.

— *brevitibialis*, Ztt.

— *piculus*, Mg.

— *nubeculosus*, Mg.

*Cricotopus tremulus*, L.

— *bicinctus*, Mg.

— *annulipes*, Mg.

— *sylvestris*, F.

*Orthocladus niveipennis*, Ztt.

— *stercorarius*, Mg.

*Tanytarsus tenuis*, Mg.

*Tanytarsus flavipes*, Mg.

*Metriocnemus fuscipes*, Mg.

*Tanypus varius*, F.

— *nebulosus*, Mg.

— *choreus*, Mg.

— *carneus*, F.

— *melanops*, Mg.

The following small families have not been studied. The individuals of several species of Gnats and Psychods are numerous enough, but at present they remain mostly unidentified.

## CULICIDÆ

*Culex nemorosus*, Mg.

*Culex pipiens*, L.

*Culex ciliaris*, L.

## DIXIDÆ

*Dixa aprilina*, Mg.

## TIPULIDÆ (*Sensu lato*)

The Crane flies, large and small, are very abundant, and a fair number of species have been observed. The four kinds of Winter Gnats may all be seen on fine days throughout the winter. The beautiful little *Idioptera* is to be found on the moors, and the Spotted *Acyphona* in the woods of the coast dunes. The large and handsome *Pedicia* and the Great Crane fly are not uncommon. The Marsh *Tipula* (*T. paludosa*) seems to be more abundant than the common Daddy Long-legs, and the large Orange *Tipula* is plentiful.

## PTYCHOPTERIDÆ

*Ptychoptera contaminata*, L.

— *lacustris*, Mg.

*Ptychoptera albimana*, F.

— *scutellaris*, Mg.

## LIMNOBIDÆ

*Limnobia quadrinotata*, Mg.

— *nubeculosa*, Mg.

— *flavipes*, F.

— *tripunctata*, F.

— *trivitta*, Schm.

*Dicranomyia modesta*, Mg.

— *chorea*, Mg.

— *dumetorum*, Mg.

*Rhiphidia maculata*, Mg.

*Ancyra opacians*, O. Sack.

*Empeda flava*, Schum.

— *nubila*, Schum.

*Gonomyia tenella*, Mg.

— *scutellata*, Egg.

*Acyphona maculata*, Mg.

*Molophilus appendiculatus*, Stæg.

— *propinquus*, Egg.

*Molophilus biflatus*, Verr.

— *obscurus*, Mg.

*Rhypholophus lineatus*, Mg.

— *nodulosus*, Mcq.

— *varius*, Mg.

— *hæmorrhoidalis*, Ztt.

*Erioptera flavescens*, Mg.

— *macrophthalma*, Lw.

— *tænionota*, Mg.

— *fuscipennis*, Mg.

— *trivialis*, Mg.

*Lipsothrix errans*, Wlk.

*Idioptera pulchella*, Mg.

*Dactylolabis gracilipes*, Lw.

*Limnophila Meigenii*, Verr.

— *dispar*, Mg.

— *lineola*, Mg.

*Limnophila lineolella*, Verr.

— *ochracea*, Mg.

— *discicollis*, Mg.

— *lucorum*, Mg.

— *nemoralis*, Mg.

*Trichocera annulata*, Mg.

— *hiemalis*, Deg.

— *fuscata*, Mg.

— *regelationis*, L.

*Ula pilosa*, Schm.

*Dicranota bimaculata*, Schm.

*Amalopsis immaculata*, Mg.

— *unicolor*, Schm.

*Pedicia rivosa*, L.

*Pachyrrhina crocata*, L.

— *histris*, F.

— *maculosa*, Mg.



# A HISTORY OF DURHAM

*Pachyrrhina cornicina*, L.  
— *guestfalica*, Westh.  
— *analis*, Schm.  
— *quadrifaria*, Mg.  
— *lunulicornis*, Schm.  
— *annulicornis*, Mg.  
*Tipula pagana*, Mg.  
— *confusa*, V. de Wulp  
— *longicornis*, Schm.

*Tipula truncorum*, Mg.  
— *hortensis*, Mg.  
— *varipennis*, Mg.  
— *scripta*, Mg.  
— *plumbea*, F.  
— *lunata*, L.  
— *lateralis*, Mg.  
— *vernalis*, Mg.

*Tipula vittata*, Mg.  
— *gigantea*, Schrk.  
— *lutescens*, F.  
— *oleracea*, L.  
— *paludosa*, Mg.  
— *fascipennis*, Mg.  
— *pelio stigma*, Schum.  
— *ochracea*, Mg.

## RHYPHIDÆ

*Rhyphus fenestralis*, Scop.

*Rhyphus punctatus*, F.

## STRATIOMYIDÆ

The Soldier-flies are not largely represented in this county. None of the three first sub-families have as yet been observed, and of the rest only *S. cuprarius* and *irridatus* and *B. chalybeata* are common.

*Chrysonotus bipunctatus*, Scop.  
*Sargus flavipes*, Mg.  
— *cuprarius*, L.

*Sargus iridatus*, Scop.  
*Microchrysa polita*, L.  
— *flavicornis*, Mg.

*Beris vallata*, Forst.  
— *chalybeata*, Forst.  
— *geniculata*, Curt.

Of the next five families only the Cleg is common among the *Tabanidæ*, although *C. cæcutiens* is sometimes fairly plentiful. All the *Leptidæ* are common, except *L. lineola* and *S. crassicornis*. *D. rufipes*, among the *Asilidæ*, is generally distributed and very common along the banks of the Gaunless. *Philonicus* is only found on the sand hills near Hart. Our only Bee-fly is common in April where primroses abound, and the two *Therevidæ* are fairly abundant among the Bent grass on the coast.

## TABANIDÆ

*Hæmatopota pluvialis*, L.  
*Theriopectes montanus*, Mg.

*Theriopectes solstitialis*, Mg.  
*Tabanus autumnalis*, L.

*Chrysops cæcutiens*, L.

## LEPTIDÆ

*Leptis scolopacea*, L.  
— *tringaria*, L.

*Leptis conspicua*, Mg.  
— *lineola*, F.

*Chrysopilus auratus*, F.  
*Symphoromyia crassicornis*

## ASILIDÆ

*Dioctria rufipes*, Deg.

*Philonicus albiceps*, Mg.

*Dismachus trigonus*, Mg.

## BOMBYLIDÆ

*Bombylius major*, L.

## THEREVIDÆ

*Thereva nobilitata*, F.

*Thereva annulata*, F.

## EMPIDÆ

Several species of these two-winged robbers are among our commonest flies. They may often be seen with their long snipe-like beaks buried deeply in the body of some unfortunate victim. Most of them are generally distributed, but *Chersodromia* is confined to the shore rocks, while *Clinocera* and *Ardoptera* have only as yet been found in the upper dales.

*Hybos grossipes*, L.  
— *temerata*, Mall.  
*Cyrtoma spuria*, Fln.  
*Rhamphomyia nigripes*, F.  
— *sulcata*, Fln.  
— *dentipes*, Ztt.  
— *variabilis*, Fln.  
— *capitata*, Mg.  
— *flava*, Fln.  
*Empis tessellata*, F.  
— *livida*, L.

*Empis borealis*, L.  
— *stercorea*, L.  
— *trigramma*, Mg.  
— *punctata*, Mg.  
— *pennipes*, L.  
— *vernalis*, Mg.  
— *vitripennis*, Mg.  
— *chloptera*, Fln.  
*Hilara maura*, F.  
— *manicata*, Mg.  
— *quadrivittata*, Mg.

*Hilara chorica*, Fln.  
— *thoracica*, Meq.  
*Cedalia holmgreni*, Ztt.  
*Oxydromia glabricula*, Fln.  
*Clinocera fontinalis*, Hal.  
— *bistigma*, Curt.  
*Ardoptera irrorata*, Fln.  
*Chersodromia arenaria*, Hal.  
*Tachydromia flavipes*, F.  
— *cursitans*, F.  
— *bicolor*, F.

# INSECTS

## DOLICHOPODIDÆ

Several of the genus *Dolichopus* are very common. The first five are numerous in marshy places in the dales; *trivialis*, *æneus*, and *G. ærosus* are common everywhere; of the others, only a few have been met with here and there.

<i>Psilopus platypterus</i> , F.	<i>Dolichopus urbanus</i> , Mg.	<i>Argyra diaphana</i> , F.
<i>Neurigona quadrifasciata</i> , F.	— <i>griseipennis</i> , Stan.	— <i>argentina</i> , Mg.
<i>Dolichopus atripes</i> , Mg.	— <i>trivialis</i> , Hal.	<i>Syntormon pallipes</i> , F.
— <i>vitripennis</i> , Mg.	— <i>brevipennis</i> , Mg.	<i>Xiphandrium caliginosum</i> , Mg.
— <i>atratus</i> , Mg.	— <i>æneus</i> , Deg.	— <i>monotrichum</i> , Lw.
— <i>picipes</i> , Mg.	<i>Hercostomus nigripennis</i> , Flin.	<i>Scellus notatus</i> , F.
— <i>plumipes</i> , Scop.	<i>Gymnopternus cupreus</i> , Flin.	<i>Hydrophorus præcox</i> , Lehm.
— <i>pennatus</i> , Mg.	— <i>ærosus</i> , Flin.	<i>Liancalus virens</i> , Scop.
— <i>popularis</i> , W.	<i>Chrysotus gramineus</i> , Flin.	<i>Campsicnemus curvipes</i> , Flin.

## LONCHOPTERIDÆ

Flies of this family are very common everywhere, and they seem to be of four varieties, but whether these are really different species is open to question.

<i>Lonchoptera punctum</i> , Mg.	<i>Lonchoptera lacustris</i> , Mg.
— <i>trilineata</i> , Ztt.	— <i>tristis</i> , Mg.

The individuals of the next two families are by no means common; one or two specimens of a few species are all that have as yet been observed.

## PLATYPEZIDÆ

<i>Callimyia speciosa</i> , Mg.	<i>Callimyia amœna</i> , Mg.
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## PIPUNCULIDÆ

<i>Verrallia pilosa</i> , Ztt.	<i>Pipunculus furcatus</i> , Egg.	<i>Pipunculus campestris</i> , Ltr.
	— <i>terminalis</i> , Thoms.	— <i>pratorum</i> , Flin.

## SYRPHIDÆ

The Hoverer or Hawk-flies are fairly well represented in this county, about 40 per cent. of the British species having been taken within its borders. *Ischyrosyrphus glaucius* was very abundant at Gibside in 1896, but usually it is rather uncommon, though generally distributed. *Arctophila muscitans* is a strangely local fly. It has appeared year after year in fair numbers within a day or two of the 28th August, at the corner of a certain field near Hesleden, but has only once been observed at any other time or place. *Merodon* has been getting commoner of late, doubtless owing to the importation of foreign bulbs.

<i>Pipizella virens</i> , F.	<i>Platychirus clypeatus</i> , Mg.	<i>Syrphus vitripennis</i> , Mg.
<i>Pipiza noctiluca</i> , L.	— <i>angustatus</i> , Ztt.	— <i>latifasciatus</i> , Mcq.
<i>Liogaster metallina</i> , F.	<i>Pyrophæna granditarsa</i> , Forst.	— <i>corollæ</i> , F.
<i>Chrysogaster hirtella</i> , L.	— <i>rosarum</i> , F.	— <i>luniger</i> , Mg.
<i>Chilosia maculata</i> , Flin.	<i>Melanastomum mellinum</i> , L.	— <i>bifasciatus</i> , F.
— <i>sparsa</i> , Lw.	— <i>scalare</i> , F.	— <i>balteatus</i> , Deg.
— <i>pulchripes</i> , Lw.	<i>Leucozona lucorum</i> , L.	— <i>cinctellus</i> , Ztt.
— <i>variabilis</i> , Panz.	<i>Ischyrosyrphus glaucius</i> , L.	— <i>cinctus</i> , Flin.
— <i>intonsa</i> , Lw.	<i>Catabomba pyrastri</i> , L.	— <i>auricollis</i> , Mg.
— <i>illustrata</i> , Har.	— <i>selenitica</i> , Mg.	— <i>auricollis</i> var. <i>maculicornis</i> , Ztt.
— <i>impressa</i> , Lw.	<i>Syrphus albostrigatus</i> , Flin.	— <i>umbellatarum</i> , F.
— <i>albitarsis</i> , Mg.	— <i>albostrigatus</i> var. <i>confusus</i>	— <i>compositarum</i> , Verr.
— <i>fraterna</i> , Mg.	— <i>tricinctus</i> , Flin.	— <i>labiatarum</i> , Verr.
— <i>vernalis</i> , Flin.	— <i>venustus</i> , Mg.	<i>Sphærophoria scripta</i> , L.
— <i>proxima</i> , Ztt.	— <i>lunulatus</i> , Mg.	— <i>scripta</i> var. <i>nigricoxa</i> , Ztt.
<i>Platychirus manicatus</i> , Mg.	— <i>torvus</i> , Ost. Sack.	— <i>menthastri</i> , L.
— <i>peltatus</i> , Mg.	— <i>vittiger</i> , Ztt.	— <i>menthastri</i> var. <i>picta</i> , Mg.
— <i>scutatus</i> , Mg.	— <i>grossulariæ</i> , Mg.	— <i>menthastri</i> var. <i>tæniata</i> , Mg.
— <i>albimanus</i> , F.	— <i>ribesii</i> , L.	

## A HISTORY OF DURHAM

Baccha elongata, F.	Eristalis tenax, L.	Criorrhina floccosa, Mg.
Sphegina clunipes, Fln.	— intricarius, L.	Xylota segnis, L.
Ascia podagrica, F.	— arbustorum, L.	— lenta, Mg.
— floralis	— nemorum, L.	— sylvarum, L.
Brachyopa bicolor, Fln.	— pertinax, Scop.	— abiens, W.
Rhingia campestris, Mg.	— rupium, F.	Syritta pipiens, L.
Volucella bombylans, L.	— horticola, Deg.	Chrysoclamys cuprea, Scop.
— bombylans var. plumata, DeG.	Myiatropa florea, L.	Arctophila mussitans, F.
— bombylans var. (a) hæmor-	Helophilus pendulus, Mg.	Sericomyia borealis, Fln.
rhoidalis, Ztt.	Merodon equestris var. narcissi,	— lappona, L.
— pellucens, L.	F.	Chrysotoxum arctuatatum, L.
Eristalis æneus, Scop.	— equestris var. validus, Mg.	— bicinctum, L.

### CONOPIDÆ

Myopa buccata, L.

### TACHINIDÆ

With the exception of *Onesia* and *Sarcophaga*, most of the *Tachinidæ* are not common. They are, during the larval stage, mostly parasitic in the larvæ of *Lepidoptera*, and the breeding cages of local lepidopterists have been the chief source of supply.

Ceromasia spectabilis, Mg.	Micropalpus vulpinus, Fln.	Stevenia maculata, Fln.
Gymnochaeta viridis, Fln.	— pictus, Mg.	Brachycoma devia, Fln.
Parexorista fugax, Rnd. ?	Erigone rudis, Fln.	Cynomyia alpina, Ztt.
— grossa, B. and B.	— consobrina, Mg.	— mortuorum, L.
Blepharidea vulgaris, Fln.	Plagia ruralis, Fln.	Onesia sepulchralis, L.
Phorocera cilipeda, Rnd.	Urophylla seria, Mg.	— cognata, Mg.
Aporomyia dubia, Fln.	Digonochaeta setipennis, Fln.	Sarcophaga carnaria, L.
Somolia simplicitaris, Ztt.	Thryptocera crassicornis, Mg.	— atropos, Mg.
Melanota volvulus, F.	Siphona cristata, F.	— cruentata, Mg.
Olivieria lateralis, F.	— geniculata, Deg.	

Of the remaining numerous families, the *Muscidæ* proper, the nearer relations of the House-fly, are well represented, most of them very common. The list of *Anthomyids* is, probably, very incomplete, and the same applies to the *Acalypterous Muscidæ*. The more noticeable species are, among the *Anthomyidæ*, *Cænasia elegantula* and *tricolor* and *Lisporephala alma*. The red-legged variety of *Fucellia* (*F. maritima*) was fairly common on the shore, 1900, but it has not been observed since. *Helomyza ustulata* is a very rare species in this county. The smaller *Muscidæ*, *sensu lato*, have been very little collected, and there is nothing in the following lists calling for further notice.

### MUSCIDÆ

Stomoxys calcitrans, L.	Cyrtoneura stabulans, Fln.	Protocalliphora grœnlandica, Ztt.
Hæmatobia stimulans, Mg.	— pabulorum, Fln.	Calliphora erythrocephala, Mg.
Pollenia vespillo, F.	Morellia simplex, Lw.	— vomitoria, L.
— rudis, F.	— hortorum, Fln.	Euphoria cornicina, F.
Mysospila meditatunda, F.	Mesembrina meridiana, L.	Lucilia cæsar, L.
Graphomyia maculata, Scop.	Pyrellia cyanicolor, Ztt.	— sericata, Mg.
Musca domestica, L.	— lasiophthalma, Mcq.	— ruficeps, Mg.
— corvina, F.		

### ANTHOMYIDÆ

Polieta lardaria, F.	Hyedotesia lasiophthalma, Mcq.	Mydea impuncta, Fln.
— albolineata, Fln.	— rufipalpis, Mcq.	— separata, Mg.
Hyedotesia incana, W.	— populi, Mg.	Sphecolyma inanis, Fln.
— lucorum, Fln.	— variegata, Mg.	Spilogaster nigrinervis, Ztt.
— marmorata, Ztt.	— palida, F.	— duplicata, Mg.
— serva, Mg.	Allæostylus flaveola, Fln.	— communis, Dsv.
— nivalis, Rnd.	Mydea vespertina, Fln.	— duplaris, Ztt.
— obscurata, Mg.	— nigritella, Ztt.	— ciliatocosta, Ztt.
— variabilis, Fln.	— urbana, Mg.	Limnophora compuncta, W.
— longipes, Ztt.	— tincta, Ztt.	— solitaria, Ztt.
— umbratica, Mg.	— pagana, F.	Melanochila riparia, Fln.



# INSECTS

*Macrorchis meditata*, Fln.  
*Hydrotæa occulta*, Mg.  
 — *irritans*, Fln.  
 — *dentipes*, F.  
*Ophyra leucostoma*, W.  
*Drymia hamata*, Fln.  
*Trichopticus hirsutulus*, Ztt.  
 — *pulcher*, Mde.  
*Hydrophoria conica*, W.  
 — *linogrisea*, Mg.  
*Hylemyia variata*, Fln.  
 — *seticrura*, Rnd.  
 — *pullula*, Ztt.  
 — *strigosa*, F.  
 — *nigrimana*, Mg.  
 — *coarctata*, Fln.  
*Mycophaga fungorum*, Deg.  
*Lasiops adelphe*, Kow.

*Lasiops ctenoctema*, Kow.  
*Anthomyia pluvialis*, L.  
 — *radicum*, L.  
*Chortophila trapezina*, Ztt.  
 — *sepia*, Mg.  
*Phorbia floccosa*, Mcq.  
 — *pudica*, Rnd.  
 — *intersecta*, Mg.  
 — *trichodactyla*, Rnd.  
 — *ignota*, Rnd.  
*Pegomyia rufipes*, Fln.  
 — *transversa*, Fln.  
 — *bicolor*, W.  
 — *nigritarsis*, Ztt.  
*Homalomyia hamata*, Mcq.  
 — *manicata*, Mg.  
 — *scalaris*, F.  
 — *canicularis*, L.

*Homalomyia ærea*, Ztt.  
 — *coracina*, Lw.  
 — *serena*, Fln.  
 — *incisurata*, Ztt.  
*Azelia macquarti*, Stæg.  
 — *zetterstedti*, Rnd.  
 — *triquetra*, W.  
 — *aterrima*, Mg.  
*Cœlomyia mollissima*, Hal.  
*Caricea tigrina*, F.  
 — *intermedia*, Fln.  
*Cœnosia elegantula*, Rnd.  
 — *tricolor*, Ztt.  
 — *sexnotata*, Mg.  
*Lisporephela alma*, Mg.  
*Fucellia fucorum*, Fln.  
 — *maritima*, Hal.

## CORDYLURIDÆ

*Parallelomma albipes*, Fln.  
*Amaurosoma tibiella*, Ztt.  
*Norellia spinimana*, Fln.

*Spathiophora hydromyzinæ*, Fln.  
*Scatophaga inquinata*, Mg.  
 — *lutaria*, F.

*Scatophaga stercoraria*, L.  
 — *squalida*, Mg.

## PHYCODROMIDÆ

*Orygma luctuosum*, Mg.

## HELOMYZIDÆ

*Helomyza rufa*, Lw.  
 — *pectoralis*, Lw.  
 — *similis*, Mg.  
 — *lævifrons*, Lw.  
 — *ustulata*, Mg.

*Helomyza montana*, Lw.  
 — *zetterstedtii*, Lw.  
 — *montana*, Lw.  
 — *palida*, Fln.

*Helomyza parva*, Lw.  
*Blepharoptera serrata*, L.  
 — *iners*, Mg.  
*Tephrochlamys rufiventris*, Mg.

## SCIOMYZIDÆ

*Neuroctena anilis*, Fln.  
*Dryomyza flaveola*, F.  
*Sciomyza albocostata*, Fln.

*Sciomyza cinerella*, Fln.  
*Tetanocera elata*, F.  
 — *lævifrons*, Lw.

*Tetanocera punctulata*, Scop.  
*Limnia rufifrons*, F.  
*Elgiva dorsalis*, F.

## PSILIDÆ

*Psila fimentaria*, L.  
 — *rufa*, Mg.

*Psila palida*, Fln.  
 — *nigricornis*, Mg.

*Psila villosula*, Mg.  
*Loxocera aristata*, Pz.

## MICROPEZIDÆ

*Calobata cibaria*, L.

*Calobata petronella*, L.

## ORTALIDÆ

*Pteropæctria afflicta*, Mg.

*Pteropæctria nigrini*, Mg.

*Pteropæctria frondescentiæ*, L.

## TRYPETIDÆ

*Acidia cognata*, W.  
 — *heraclei*, L.  
*Spilographa zoë*, Mg.  
*Trypeta onotrophes*, Lw.

*Urophora solstitialis*, L.  
*Sphenella marginata*, Fln.  
*Tephrites miliaria*, Schr.

*Tephrites hyoscyami*, L.  
 — *vespertina*, Lw.  
 — *bardanæ*, Schr.

## LONCHÆIDÆ

*Lonchæa vaginalis*, Fln.  
 — *chorea*, F.  
 — *albitarsis*, Ztt.

*Palloptera ustulata*, Fln.  
 — *umbellatarum*, F.

*Palloptera saltuum*, L.  
 — *arcuata*, Fln.

# A HISTORY OF DURHAM

## SAPROMYZIDÆ

<i>Sapromyza lupulina</i> , F.	<i>Sapromyza pallidiventris</i> , Fln.	<i>Sapromyza rorida</i> , Fln.
— <i>decempunctata</i> , F.	— <i>obsoleta</i> , Fln.	<i>Lauxania ænea</i> , Fln.

## OPOMYZIDÆ

<i>Balioptera tripunctata</i> , Fln.	<i>Opomyza germinationis</i> , L.	<i>Pelethophila flava</i> , L.
— <i>combinata</i> , L.	— <i>florum</i> , F.	

## SEPSIDÆ

<i>Sepsis violacea</i> , Mg.	<i>Sepsis cynipsea</i> , L.	<i>Nemopoda cylindrica</i> , F.
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## PIOPHILIDÆ

<i>Piophila casei</i> , L.
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## GEOMYZIDÆ

<i>Diastata nebulosa</i> , Fln.
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## EPHYDRIDÆ

<i>Parhydra aquila</i> , Fln.
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## DROSOPHILIDÆ

<i>Drosophila confusa</i> , Stæg.	<i>Drosophila funebris</i> , F.
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## CHLOROPIDÆ

<i>Meromyza læta</i> , Mg.	<i>Chlorops tæniopus</i> , Mg.	<i>Chlorops gracilis</i> , Mg.
<i>Centor cereris</i> , Fln.	— <i>læta</i> , Mg.	<i>Oscinis albiseta</i> , Mg.
<i>Chlorops didyma</i> , Ztt.	— <i>scalaris</i> , Mg.	<i>Elachyptera cornuta</i> , Fln.
— <i>scutellaris</i> , Ztt.		

## AGROMYZIDÆ

<i>Agromyza pusilla</i> , Mg.	<i>Ochthiphila polystigma</i> , Mg.
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## PHYTOMYZIDÆ

<i>Napomyza lateralis</i> , Fln.	<i>Phytomyza notata</i> , Mg.	<i>Phytomyza flava</i> , Mg.	<i>Phytomyza fuscula</i> , Ztt.
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## BORBORIDÆ

<i>Borborus longipennis</i> , Hal.	<i>Borborus geniculatus</i> , Mcq.	<i>Limosina pumilio</i> , Mg.
— <i>equinus</i> , Fln.	<i>Limosina fontinalis</i> , Fln.	— <i>vitripennis</i> , Ztt.
— <i>nigrifemoratus</i> , Mcq.	— <i>lutosa</i> , Stnh.	

## PHORIDÆ

<i>Trineura aterrima</i> , F.	<i>Phora rufipes</i> , Mg.	<i>Phora incrassata</i> , Mg.
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## HIPPOSCIDÆ

<i>Ornithomyia avicularia</i> , L.	<i>Stenopteryx hirundinis</i> , L.	<i>Melophagus ovinus</i> , L.
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## HEMIPTERA

Practically nothing has been done in the Hemiptera in Durham since Bold's time, and the following list is chiefly his. The very names, Bugs, Plant Lice, and Cuckoo Spit, seem to be enough to frighten young entomologists, although there is but one seriously objectionable bug, while there are hundreds of others of great beauty both in form and colour; and the life histories of the Plant Lice or Aphides, with their deeply interesting instances of parthenogenesis, and their curious alternations of form and domicile, present most alluring objects for investigation.

# INSECTS

## HEMIPTERA—HETEROPTERA

### Bugs

#### GYMNOCERATA

##### PENTATOMIDÆ

- Cydnina  
 Sehirus, Am. S.  
 — bicolor, Linn. Hedge-  
   banks (Backhouse)  
 Gnathoconus, Fieb.  
 — albomarginatus, Fab. *Gib-*  
   *side*, very rare (V. R.  
   Perkins)  
 Pentatomina  
 Pentatoma, Oliv.  
 — prasina, Linn. *Shull* (Back-  
   house)  
 Tropicoris, Hahn.  
 — rufipes, Linn. Common  
   on trees  
 Asopina  
 Zicrona, Am. S.  
 — cærulea, Linn. *Shull* (Back-  
   house). *Blanchland* (Bag-  
   nall)

##### COREIDÆ

- Coreina  
 Enoplops, Am. S.  
 — scapha, Fab. *Ryhope Dene*  
   (John Handcock), *Point*,  
   *Sunderland* (Backhouse)

##### LYGÆIDÆ

- Pachymerina  
 Stygnus, Fieb.  
 — pedestris, Fall. Common  
   in sandy places  
 — arenarius, Hahn. Abun-  
   dant at the roots of  
   plants in dry places  
 Scolopostethus, Fieb.  
 — affinis, Schill. Common in  
   sandy places and among  
   nettles  
 Notochilus, Fieb.  
 — contractus, H.S. Abun-  
   dant beneath stones on  
   the sea-coast  
 Drymus, Fieb.  
 — sylvaticus, Fab. In moss,  
   etc., throughout the  
   district  
 — brunneus, Sahlb. Common  
   in dead leaves, moss, &c.

##### TINGIDIDÆ

- Tingidina  
 Monanthia, Lep.  
 — cardui, Linn. *Gibside*.  
   Common on thistles.

##### HYDROMETRIDÆ

- Hydrometrina  
 Hydrometra, Latr.  
 — stagnorum, Linn. Not  
   uncommon among her-  
   bage on the borders of  
   ponds

#### HYDROMETRIDÆ (continued)

- Veliina  
 Velia, Latr.  
 — currens, Fab. Very abun-  
   dant, but always without  
   wings  
 Gerridina  
 Gerris, Fab.  
 — paludum, Fab. (Back-  
   house)  
 — najas, De G. Abundant  
   on running water, all  
   without wings  
 — thoracica, Schum. Fre-  
   quents on pools of water  
   on the moors  
 — lacustris, Linn. Very  
   common on ponds and  
   ditches

##### REDUVIIDÆ

- Nabidina  
 Nabis, Latr.  
 — lativentris, Boh. Very  
   abundant, always with  
   undeveloped wings  
 — limbatus, Dahlb. Common  
 — ferus, Linn. *Gibside*  
 — rugosus, Linn. Not un-  
   common on heath and  
   generally of the fully  
   developed form

##### SALDIDÆ

- Saldina  
 Salda, Fab.  
 — scotica, Curt. Banks of  
   the *Derwent*  
 — C.-album, Fieb. Banks of  
   the *Derwent*  
 — saltatoria, Linn. Abounds  
   all over the district near  
   *Tyneside*  
 — cincta, H.S. *Gibside* (V.  
   R. Perkins)

##### CIMICIDÆ

- Cimicina  
 Cimex, Linn.  
 — lectularis, Linn. The bed  
   bug. Too common in  
   dirty houses, also in coal  
   mines in the cracks of  
   the timber supporting  
   the roof  
 Anthocorina  
 Lyctocoris, Hahn.  
 — campestris, Fab. Abun-  
   dant in herbage.  
 Piezostethus, Fieb.  
 — galactinus, Fieb. Common  
   in cut grass, &c.  
 Anthocoris, Fall.  
 — nemoralis, Fab. Very  
   abundant

#### CIMICIDÆ (continued)

- Anthocoris sylvestris, Linn.  
 Abundant  
 Tetraphleps, Fieb.  
 — vittata, Fieb. *Axwell Park*

##### CAPSIDÆ

- Capsina  
 Pithanus, Fieb.  
 — mærkeli, H.S. Unde-  
   veloped form is abun-  
   dant among grass in  
   woods  
 Miris, Fab.  
 — holsatus, Fab.  
 — calcaratus, Fall. Very  
   abundant  
 Megalocera, Fieb.  
 — ruficornis, Fall. *Axwell*  
   *Park*, on bushes, etc.  
 Leptopterna, Fieb.  
 — dolabrata, Linn. Common  
   among herbage  
 Monalocoris, Dahlb.  
 — filices, Linn. Common  
 Calocoris, Fieb.  
 — sexguttatus, Fab. *Gibside*  
 — roseomaculatus, De G.  
   *Marsden*  
 — alpestris, Mey. *Gibside*  
 — bipunctatus, Fab. Com-  
   mon  
 Lygus, Hahn.  
 — contaminatus, Fall. Abun-  
   dant on flowers of  
   *Umbelliferae* in woods  
 — pratensis, Fab. Common  
 — kalmii, Linn. Common  
   among herbage,  
   especially near the coast  
 — cervinus, H.S. *Gibside*.  
   Rare  
 Liocoris, Fab.  
 — tripustulatus, Fab. Not  
   abundant. *Durham*  
 Rhopalotomus, Fieb.  
 — ater, Linn. Common on  
   grass, etc.  
 Dicyphus, Fieb.  
 — epilobii, Reut. *Bishop*  
   *Auckland*  
 — errans, Wolff. Not very  
   common  
 — pallidus, Fall. *Gibside*,  
   *Axwell*. Common  
 Ætorhinus, Fieb.  
 — angulatus, Fall. Common  
   on bushes  
 Globiceps, Latr.  
 — flavomaculatus, Fab. *Gib-*  
   *side*. Rare. V. R. Per-  
   kins  
 Mecomma, Fieb.



# A HISTORY OF DURHAM

## CAPSIDÆ (*continued*)

- Mecomma ambulans, Fall. Abundant among herbage  
 — elegantulus, Meyer. *Baldon Flats*  
 Orthotylus, Fieb.  
 — nassatus, Fab. Common on bushes, etc.  
 — concolor, Kb. *Gibside*. Very rare  
 — ericetorum, Fall. Abundant on heath  
 Heterocordylus, Fieb.  
 — tibialis, Hahn. *Gibside*, *Axwell*, in flowers of broom

## CAPSIDÆ (*continued*)

- Psallus, Fieb.  
 — ambiguus, Fall. Very common  
 — variabilis, Fall. Common  
 — varians, H.S. *Axwell Park*  
 Plagiognathus, Fieb.  
 — arbustorum, Fab. Abundant on bushes

## CRYPTOCERATA

### NEPIDÆ

- Nepa, Linn.  
 — cinerea, Linn. Abounds in ponds and ditches

## NOTONECTIDÆ

- Notonecta, Linn.  
 — glauca, Linn. Common

## CORIXIDÆ

- Corixa, Geoffr.  
 — geoffroyi, Leach. Abundant in ponds  
 — sahlbergi, Fieb. Common in ponds and ditches  
 — striata, Fieb. Abundant in running water  
 — fabricii, Fieb. (nigrolineata, Fieb.) Very common in ponds and ditches

## HEMIPTERA—HOMOPTERA

*Cicadas, Fiend-flies, Lantern-flies, Frog-hoppers, Grass-flies, Aphides, etc.*

### CICADINA

#### MEMBRACIDÆ

- Centrotus, Fab.  
 — cornutus, Linn. Not uncommon

#### CIXIIDÆ

- Cixius, Latr.  
 — nervosus, Linn. Very common, on trees, among herbage, etc.  
 — pilosus, Ol. Not uncommon

#### DELPHACIDÆ

- Liburnia, Stal.  
 — guttula, Germ. *Gibside*  
 — discolor, Boh. Common  
 — striatella, Fab. *Gibside*  
 — limbata, Fab.  
 Dicranotropis, Fieb.  
 — hamata, Boh.

#### CERCOPIDÆ

- Aphrophora, Germ.  
 — alni, Fln. In birch woods, rather rare  
 Philænus, Stal.  
 — spumarius, Linn. Very abundant  
 — lineatus, Linn. Near the coast

#### PAROPHIDÆ

- Megophthalmus, Curt.  
 — scanicus, Fall. *South Shields*

### BYTHOSCOPIDÆ

- Macropsis, Lewis.  
 — lanio, Linn. Common  
 Bythoscopus, Germ.  
 — flavicollis, Linn. Common  
 Pediopsis, Burm.  
 — virescens, Fab. *Derwentside*  
 Idiocerus, Lewis  
 — adustus, H.S. *Derwentside*  
 — populi, Linn. Not rare

### TETTIGONIDÆ

- Evacanthus, L. and S.  
 — interruptus, Linn. Common  
 Tettigonia, Geoffr.  
 — viridis, Liv. *Boldon Flats*

### ACOCEPHALIDÆ

- Strongylocephalus, Flor.  
 — agrestis, Fall. Common  
 Acocephalus, Germ.  
 — bifasciatus, Linn. Abundant at *Gibside*  
 — albifrons, Linn. Seabanks at *South Shields*  
 — rusticus, Fab. Abundant. (Bold). Probably nervousus, Schr.  
 — adustus, Hardy. *Dunston* (Bold). Probably nervousus, Schr.  
 — flavostriatus, Don. *South Shields*

### JASSIDÆ

- Deltocephalus, Burm.  
 — abdominalis, Fab. *Axwell Park*, rare  
 — ocellaris, Fall. Common  
 — socialis, Flor. *Axwell Park*, abundant  
 — sabulicola, Curt. Abundant on the Bents, *South Shields*  
 — striatus, Linn. *South Shields*, *Derwentside*

### TYPHLOCYBIDÆ

- Alebra, Fieb.  
 — albostratella, Fall. *Gibside*  
 Kybos, Fieb.  
 — smaragdula, Fall. *Derwent*  
 Eupteryx, Curt.  
 — notata, Curt. Common  
 — stachydearum, Hard. *Axwell Park*  
 — signatipennis, Boh. *Axwell Park*  
 Typhlocyba, Germ.  
 — jucunda, H.S. *Derwent Valley*  
 — ulmi, Linn. *Gibside*  
 — quercus, Fab. *Winkleton*  
 — geometrica, Schr. *Gibside*

# SPIDERS

## ARACHNIDA<sup>1</sup>

### *Spiders*

The following list of the spiders of the county of Durham is almost entirely due to the researches of the Rev. J. E. Hull, of North Shields, who in 1896 published a 'Catalogue of the Spiders (Araneida) of Northumberland and Durham.'<sup>2</sup> Out of a total of about 534 species of spiders recorded for Great Britain and Ireland only 112 species have been taken in the county of Durham, while of the *Pseudo-scorpiones* and *Opiliones* there are none at all recorded, so far as I can make out.

There is no doubt, however, that the number of spiders would be much increased if a diligent search were instituted, for there are plenty of species which one can be quite sure must inhabit a district whose physical characters are of the kind furnished by this county.

Of those recorded the following are worthy of special mention either on account of their rarity or being of particular individual interest: *Oölops pulcher*; *Cryphæa diversa*; *Cicurina cinerea*; *Meta menardi*; *Centromerus sylvaticus*; *Micryphantes cornigera*; *Dicymbium tibiale*; and *Euryopsis blackwallii*.

## ARANEÆ

### ARACHNOMORPHÆ

#### DYSDERIDÆ

Spiders with six eyes and two pairs of stigmatic openings, situated close together on the genital rima; the anterior pair communicating with lung books, the posterior with tracheal tubes. Tarsal claws, two in *Dysdera*, three in *Harpactes* and *Segestria*.

1. *Harpactes bombergii* (Scopoli).

Durham; Kieper Wood and Pelaw Wood; Teesdale; Falcon Clints; Harperley (J. E. H.).

Rare under bark of trees, and recognizable by its linear ant-like form, black carapace, and pale clay-yellow abdomen and three tarsal claws.

2. *Segestria senoculata* (Linnæus).

Durham; Teesdale; Ryhope (J. E. H.).

Not common; under bark of trees, in the crevices of loose stone walls, and amongst detached rocks. Recognizable by its linear form and the black diamond-shaped blotches on the dorsal surface of the abdomen.

3. *Oölops pulcher*, Templeton.

Durham; Pelaw Wood and Kieper Wood (J. E. H.).

Not common; usually beaten from over-hanging grass on dry sunny banks.

#### DRASSIDÆ

Spiders with eight eyes, situated in two transverse rows. The tracheal openings lie just in front of the spinners. The tarsal claws are two in number, the anterior pair of spinners being set wide apart at the base, and the maxillæ are more or less impressed across the middle.

4. *Drassodes lapidosus* (Walckenaer).

Ryhope (J. E. H.).

Very common under stones. Also known as *Drassus lapidicolens*.

#### CLUBIONIDÆ

Spiders with eight eyes, situated in two transverse rows. The tracheal openings lie immediately in front of the spinners. The tarsal claws are two in number, but the anterior pair of spinners are set close together at the base; the maxillæ are convex and not impressed across the middle.

5. *Zora spinimana* (Sundevall).

Urpeth (J. E. H.).

Known also as *Hecærgæ spinimana* or *maculata*.

6. *Clubiona terrestris*, Westring.

Durham; Ryhope (J. E. H.).

Not uncommon in the summer time, when it may be found wandering about at night on the walls of outhouses, palings, etc. The female may be found in a silken domicile with her cocoon under or between the leaves of shrubs. Known also as *C. amarantha*, Blackwall.

<sup>1</sup> By the late F. O. Pickard-Cambridge. Revised and corrected by the Rev. O. Pickard-Cambridge, Bloxworth, Dorset.

<sup>2</sup> *Natural History Transactions of Northumberland, Durham, and Newcastle-upon-Tyne*, xiii. part i.

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## 7. *Clubiona reclusa*, O. P.-Cambridge.

Durham (J. E. H.).

A rarer species than the last; usually beaten from foliage and bushes in the summer time.

## 8. *Clubiona lutescens*, Westring.

Durham (J. E. H.).

Pretty plentiful in the woods at Durham. Sometimes fairly abundant where it occurs amongst dry rushes and sedge grass in swampy places.

## 9. *Clubiona pallidula* (Clerck).

Durham (J. E. H.).

A larger species than any of the above, and usually fairly common amongst bramble bushes,

where the female makes its egg-cocoon within the folded leaves. Known also as *C. epimelas*, Black-wall.

## 10. *Clubiona compta*, C. L. Koch.

Durham; Teesdale; Wolsingham (J. E. H.).

A very small species, whose abdomen is striped diagonally on each side. Not uncommon amongst the foliage of bushes and shrubs in the summer time.

## 11. *Micaria pulcra* (Sundevall).

Durham, Shincliffe Mill (J. E. H.).

Known also as *Drassus micans* and *nitens*, Black-wall.

## THOMISIDÆ

Spiders with eight eyes, situated in two transverse rows, two tarsal claws, and anterior spinners close together at their base. Maxillæ not impressed. The crab-like shape and side-long movements of these spiders are their chief characteristics, enabling them to be easily distinguished as a rule from the more elongate *Drassidæ* and *Clubionidæ*.

## 12. *Philodromus aureolus* (Clerck).

Durham; Wolsingham; Ryhope (J. E. H.).

A very abundant species, with usually a dull red-brown abdomen, with yellowish central pattern. It frequents the foliage of trees of all kinds, and especially in the immature condition will out-

number all other species which fall into the umbrella beneath the beating-stick.

## 13. *Xysticus cristatus* (Clerck).

Upper Teesdale (J. E. H.).

This is by far the commonest of the 'crab-spiders,' and is found abundantly on foliage or crouching on bare places in fields and commons. Known also under *Thomisus*.

## 14. *Oxyptila flexa*, O. P.-Cambridge.

Durham (J. E. H.).

An adult male and an immature female were beaten from furze near the city in the summer of 1894.

## SALTICIDÆ

The spiders of this family may be recognized in a general way by their mode of progression, consisting of a series of leaps, often many times their own length. More particularly they may be known by the square shape of the cephalic region and the fact that the eyes are arranged in three rows of 4, 2, 2, the centrals of the anterior row being much the largest and usually iridescent. Those of the second row are the smallest, while the posterior pair is placed well back and helps to give the quadrate character to the carapace. Otherwise these spiders are simply specialized *Clubionids* with two tarsal claws and other minor characters possessed in common with members of this latter family.

## 15. *Salticus scenicus* (Clerck).

Durham; Ryhope (J. E. H.).

A black species with white lateral stripes. Known also under *Epiblemum*.

## 16. *Euophrys frontalis* (Walckenaer).

Durham, Pelaw Wood (J. E. H.).

Not common. Known also under *Salticus*.

## 17. *Neon reticulatus* (Blackwall).

Durham; Upper Teesdale; Ryhope (J. E. H.).

Not common. Known also under *Salticus*.

## 18. *Salticus cingulatus* (Panzer).

Durham; Harperley; Wolsingham (J. E. H.).

Known also under *Epiblemum*.

## 19. *Euophrys erraticus* (Walckenaer).

Durham, Pelaw Wood and Kepier Wood (J. E. H.).

Amongst grass, dead leaves, and under stones or on rocks. Known also under *Attus* and as *Salticus distinctus*, Blackwall.

## PISAURIDÆ

Spiders with eight eyes in three rows of 4, 2, 2; the small anterior eyes being sometimes in a straight line, sometimes recurved and sometimes procurved. Those of the other two rows are situated in the form of a rectangle of various proportions, and are much larger than the eyes of the anterior row. The third claw is three in number. *Pisaura* runs

freely over the herbage, carrying its egg-sack beneath the sternum; while *Dolomedes* is a dweller in marshes and swamps.

## 20. *Pisaura mirabilis* (Clerck).

Durham (Rev. A. M. Norman).

Known also as *Dolomedes* or *Ocyale mirabilis*.



# SPIDERS

## LYCOSIDÆ

The members of this family are to be found running freely over the ground, and carrying the egg-sac attached to the spinners. Many of the larger species make a short burrow in the soil and there keep guard over the egg-sac. Eyes and tarsal claws as in the *Pisauridæ*, with slight differences.

21. *Lycosa terricola* (Thorell).

Durham ; Upper Teesdale (J. E. H.).

Fairly plentiful under stones in spring and autumn. The female frequently excavates a retreat for herself and her egg-cocoon in the soft earth. Known also under *Trochosa* and as *Lycosa agretyca*, Blackwall.

22. *Lycosa pulverulenta* (Clerck).

Durham, Widdy Bank Fell (J. E. H.).

Common everywhere, running in the sunshine in grassy places. Adult in June. Known also under *Tarentula* and as *Lycosa rapax*, Blackwall.

23. *Lycosa accentuata*, Latreille.

Ryhope (J. E. H.).

A few taken in June at the roots of furze at the top of the cliff. Adult in June. Known also under *Tarentula* and as *Lycosa andrenivora*, Blackwall.

24. *Pardosa agricola* (Thorell).

Harperley, Wolsingham (J. E. H.).

Adult in June and common on sandy and

pebbly stretches by the river. Known also under *Lycosa* and as *Lycosa fluviatilis*, Blackwall.

25. *Pardosa lugubris* (Walckenaer).

Durham ; Wolsingham (J. E. H.).

Adult in May and June and common in woods. Known also under *Lycosa*.

26. *Pardosa pullata* (Clerck).

Durham ; Upper Teesdale (J. E. H.).

Adult in May and June. Abundant on Widdy Bank Fell on the banks of the streams. Known also under *Lycosa* and as *Lycosa obscura*, Blackwall.

27. *Pardosa nigriceps* (Thorell).

Durham ; Upper Teesdale ; Wolsingham.

Common ; adult in the summer ; sometimes ascends into shrubs ; especially furze. Known also under *Lycosa* and as *Lycosa congener*, O. P.-Cambridge.

28. *Pirata hygrophilus*, Thorell.

Durham (J. E. H.).

Adult in early summer, and common in boggy and marshy places. Known also as *Lycosa piscatoria*, Blackwall.

29. *Pirata piraticus* (Clerck).

Durham, Upper Teesdale (J. E. H.).

Adult in June and abundant on the southern side of Widdy Bank Fell. Known also under *Lycosa*.

## AGELENIDÆ

Spiders with eight eyes, situated in two transverse rows. Legs with three tarsal claws. The species of this family spin a large sheet-like web, and construct a tubular retreat at the back of it, which leads to some crevice amongst the rocks, the roots of herbage, or the chinks in the walls of outhouses, wherever the various species may happen to be found. The posterior pair of spinners is usually much longer than the other two pairs.

30. *Cryphæa silvicola* (C. L. Koch).

Teesdale (J. E. H.).

Common in the hill districts, in the fell walls and beaten from furze. Known also as *Tegenaria sylvicola*, Blackwall.

31. *Cryphæa diversa*, O. P.-Cambridge.

Durham, Pelaw Wood (J. E. H.).

Very rare. An immature female was taken under a stone in the spring of 1893.

32. *Cælotes atropos* (Walckenaer).

Durham ; Teesdale ; Wolsingham (J. E. H.).

Very common under stones on the fells and in woods all the year round. Adult males are most frequently met with in the spring ; for the rest of the year adult females are perhaps ten times as numerous as the males. A large spider and swift in its movements. Known also as *Cælotes saxatilis*, Blackwall.

32a. *Argyroneta aquatica*, Latreille.

Durham.

In ponds and ditches, in the neighbourhood of the city. Not rare. (O. P.-Cambridge, 1856.)

33. *Tegenaria atrica* (C. L. Koch).

Winlaton (J. E. H.).

A very large spider with long hairy legs, found in cellars and outhouses as well as in holes in banks or on sand-dunes. Two examples only are recorded from this county.

34. *Textrix denticulata* (Olivier).

Durham (J. E. H.).

Common in inhabited houses and greenhouses, also under stones. It constructs a fine web of the form typical of the family, a strongly woven horizontal snare narrowed at one corner into a tubular retreat. A spider of graceful form and exceedingly rapid movements. Adult in summer. Known also as *Textrix lycosina*, Blackwall.

35. *Cicurina cinerea* (Panzer).

Durham, Kepier Wood (J. E. H.).

An immature female was taken under a stone in May, 1895 ; and a small colony was found in a disused quarry in Holywell Dene, of which some of the females were adult, but no adult males. Known also under *Tegenaria*.

36. *Antistea elegans* (Blackwall).

Durham, Pelaw Wood (J. E. H.).

Immature examples of both sexes were taken in a boggy place, but apparently not a common species. Known also as *Agelena elegans*, Blackwall, and under *Habnia*.

# A HISTORY OF DURHAM

## ARGYOPIDÆ

The spiders included in this family have eight eyes, situated in two rows, the lateral eyes of both rows being usually adjacent if not in actual contact, while the central eyes form a quadrangle. The tarsal claws are three, often with other supernumerary claws. The web is either an orbicular snare, or consists of a sheet of webbing beneath which the spiders hang and capture the prey as it falls upon the sheet. This immense family includes those usually separated under the names *Epeiridae* and *Linyphiidae*.

### 37. *Meta Menardi* (Latreille).

Durham, Kepier Wood (J. E. H.), Finchal Abbey (O.P.-C.).

Taken from overhanging rocks, old ruins, and in caverns.

### 38. *Meta segmentata* (Clerck).

Common everywhere (J. E. H.).

A very abundant spider in the summer and autumn amongst nettles and other herbage along hedgerows. The spiders vary very much in size, and spin an orbicular web having a clear space in the centre as do others of the genus and also *Tetragnatha*, thus differing from the genus *Araneus* (*Epeira*). Known also as *Epeira inclinata*, Blackwall.

### 39. *Meta merianæ* (Scopoli).

Common everywhere (J. E. H.).

A larger species found in cellars and under damp overhanging banks. Known also as *Epeira antriada*, Blackwall, and a variety with a white band down the centre of the abdomen as *E. celata*, Blackwall.

### 40. *Tetragnatha extensa* (Linnaeus).

Durham ; Wolsingham.

A very common species of elongate form which sits in the centre of its web with legs stretched out in front and behind. Not so entirely confined to marshy localities as the next species, and easily recognized by the silvery white band under the abdomen. The jaws of the males of this genus are very large and conspicuous.

### 41. *Tetragnatha solandri* (Scopoli).

Durham (J. E. H.).

Very similar to the last species in general appearance, but almost entirely confined to river banks and marshy swamps. Can be recognized by the dull white bands beneath the abdomen and the absence of any pale line on the sternum.

### 42. *Pachygnatha clerckii*, Sundevall.

Common everywhere (J. E. H.).

Resembles a *Tetragnatha* in the possession of very large mandibles, but is not elongate and spins no orbicular web. Found under leaves and at the roots of herbage, especially in marshy places.

### 43. *Pachygnatha degeerii*, Sundevall.

Common everywhere (J. E. H.).

Smaller and commoner than the last species. Found at the roots of herbage.

### 44. *Nesticus cellulanus* (Clerck).

Durham ; Teesdale (J. E. H.).

Known also as *Linyphia crypticolens*, Blackwall.

### 45. *Linyphia triangularis* (Clerck).

Common everywhere (J. E. H.).

A very abundant species in autumn, whose sheet-like snares glistening with dewdrops form a conspicuous feature on the hedges and bushes in the early mornings. The mandibles in the male are very long, resembling those in *Tetragnatha*.

### 46. *Linyphia pusilla*, Sundevall.

Wolsingham (J. E. H.).

A smaller species than the last, with deep black ventral region. The palpus in the male sex has a long spiral spine. It spins its web near the ground amongst herbage. Rare in this county. Known also as *L. fuliginea*, Blackwall.

### 47. *Linyphia montana* (Clerck).

Common everywhere (J. E. H.).

A large species whose habits are similar to those of *Triangularis*. It is, however, often found also in conservatories and outhouses. Known also as *L. marginata*, Blackwall.

### 48. *Linyphia hortensis*, Sundevall.

Wolsingham ; Teesdale (J. E. H.).

Not a common species, somewhat similar to *pusilla* in general appearance and habits. Known also as *L. pratensis*, Blackwall.

### 49. *Linyphia clathrata*, Sundevall.

Common everywhere (J. E. H.).

Resembles *montana*, but is smaller. Very common amongst herbage. Known also as *Nerieue marginata*, Blackwall.

### 50. *Linyphia peltata* (Wider).

Durham ; Wolsingham (J. E. H.).

A very small and common species found amongst the foliage of trees and bushes in the summer time. A variety is known also as *L. rubea*, Blackwall.

### 51. *Labulla thoracica* (Wider).

Wolsingham ; Durham ; Teesdale (J. E. H.).

Not uncommon in outhouses or under overhanging banks and rocks. The male is remarkable for the enormously long spiral spine on the palpal bulb.

### 52. *Drapetisca socialis* (Sundevall).

Durham ; Wooler (J. E. H.).

Not uncommon, often abundant, where it occurs, sitting close to the bark of fir and other trees as well as on rocks. Known also under *Linyphia*.

### 53. *Bolyphantes luteolus* (Blackwall).

Durham (J. E. H.).

Known also as *Linyphia alticeps*, Blackwall.



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54. *Lepthyphantes flavipes* (Blackwall).  
Durham ; Upper Teesdale (J. E. H.).  
A rare species. Known also under *Linyphia*.
55. *Lepthyphantes cristatus* (Menge).  
Durham ; Teesdale (J. E. H.).  
Not common ; amongst grass and dead leaves.
56. *Lepthyphantes blackwallii*, Kulczynski.  
Durham ; Wolsingham ; Upper Teesdale (J. E. H.).  
Often very common at the roots of herbage in September. Known also as *Linyphia tenebricola* (Wider), O. P.-C., and *L. terricola*, O. P.-C. and Blackwall.
57. *Lepthyphantes tenuis* (Blackwall).  
Common everywhere (J. E. H.).  
Very similar to the last species and found under the same conditions. Known also as *Linyphia tenebricola*, O. P.-C.
58. *Lepthyphantes minutus* (Blackwall).  
Durham ; Low Fell (J. E. H.).  
Known also under *Linyphia*. Common amongst loose stones and in angles of buildings.
59. *Bathyphantes pullatus* (O. P.-Cambridge).  
Durham (J. E. H.).  
Known also under *Linyphia*. Common in marshy swamps. Adult in the spring.
60. *Bathyphantes nigrinus* (Westring).  
Common everywhere (J. E. H.).  
Known also as *Linyphia pulla*, Blackwall, and also under *Linyphia*. Found in marshes and swamps.
61. *Bathyphantes concolor* (Wider).  
Durham (J. E. H.).  
A very common spider amongst loose stones, heaps of rubbish, etc. Known also as *Theridion filipes*, Blackwall, and under *Linyphia*.
62. *Bathyphantes gracilis* (Blackwall).  
Durham ; Upper Teesdale ; Urpeth (J. E. H.).  
Fairly common. Known also under *Linyphia*.
63. *Bathyphantes dorsalis* (Wider).  
Durham ; Upper Teesdale ; Urpeth (J. E. H.).  
Common on the foliage of trees and bushes in the summer time. Known also under *Linyphia* and as *L. claytoniæ*, Blackwall.
64. *Poecilometes variegata* (Blackwall).  
Durham ; Upper Teesdale ; Wolsingham (J. E. H.).  
Common amongst grass in damp places. Known also under *Linyphia* and *Neriene*.
65. *Centromerus bicolor* (Blackwall).  
Urpeth (J. E. H.).  
Common in September and October, running on palings in the bright sunshine. Known also under *Linyphia*, *Neriene*, and *Tmeticus*.
66. *Centromerus silvaticus* (Blackwall).  
Urpeth (J. E. H.).  
Rare. Adult from the middle of August. Known also under *Neriene* and as *Tmeticus silvaticus*.
67. *Microneta viaria* (Blackwall).  
Harperley (J. E. H.).  
Known also under *Neriene*.
68. *Tapinopa longidens* (Blackwall).  
Urpeth (J. E. H.).  
Adult females only have been taken, from August to October. This spider weaves a web of very fine texture under stones. Known also under *Linyphia*.
69. *Macrargus abnormis* (Blackwall).  
Durham ; Upper Teesdale (J. E. H.).  
Rare ; in tufts of grass by streams. An immature male and an adult female only taken, the latter in May. Known also under *Neriene* and *Tmeticus*.
70. *Porrhomma pygmæum* (Blackwall).  
Durham (J. E. H.).  
Adult males only taken. Known also under *Neriene*.
71. *Porrhomma microphthalmum* (O. P.-Cambridge).  
Pelton coalpits near Chester le Street (R. H. Meade).  
Males and females were sent to Dr. Meade of Bradford in 1860 from the coalpits. They had probably been carried down the shaft amongst the horse fodder, and lived gregariously in a common web.
72. *Mengea scopigera* (Grube).  
Urpeth (J. E. H.).  
Plentiful among damp, long grass. Known also as *Pedina scopigera*, *Pedina cristata*, and *Tmeticus scopiger*.
73. *Micryphantes cornigera* (Blackwall).  
Durham (J. E. H.).  
Very rare ; two adult males only, by the river. Known also under *Neriene*.
74. *Erigone dentipalpis* (Wider).  
Durham (J. E. H.).  
Often abundant on railings. Known also under *Neriene*.
75. *Tiso vagans* (Blackwall).  
Ryhope (J. E. H.).  
Rare amongst dead leaves in woods and shrubberies. Known also under *Neriene* and as *N. longimana*.
76. *Gongylidium rufipes* (Linnæus).  
Ryhope ; Barnard Castle (J. E. H.).  
Not common. Known also under *Neriene* and as *N. munda*, Blackwall.



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77. *Gonatium isabellinum* (C. L. Koch).  
Harperley ; Wolsingham ; Durham (J. E. H.).  
Known also as *Nerienne rubella*, Blackwall.
78. *Dicyphus cornutus* (Blackwall).  
Durham ; Upper Teesdale (J. E. H.).  
Known also under *Nerienne*.
79. *Hypomma bituberculatum* (Blackwall).  
Durham ; Upper Teesdale ; Wolsingham (J. E. H.).  
Known also under *Nerienne*.
80. *Dismodicus bifrons* (Blackwall).  
Durham ; Upper Teesdale ; Wolsingham (J. E. H.).  
Known also under *Walckenaera*.
81. *Kulczynskiellum retusum* (Westring).  
Durham (J. E. H.).  
Known also under *Nerienne*, and *Erigone*, also as *Nerienne elevata*, O.P.-Cambridge.
82. *Kulczynskiellum fuscum* (Blackwall).  
Durham (J. E. H.).  
Not common. September.
83. *Edothorax tuberosus* (Blackwall).  
Durham (J. E. H.).  
Known also under *Nerienne*.
84. *Blackwallia acuminata*, Blackwall.  
Durham ; Urpeth (J. E. H.).  
Known also under the name *Walckenaera*.
85. *Dicymbium tibiale* (Blackwall).  
Urpeth (J. E. H.).  
A rare spider. Adult males, August and September.
86. *Plasiocrærus alpinus* (O.P.-Cambridge).<sup>1</sup>  
Upper Teesdale (J. E. H.).
87. *Wideria antica* (Wider).  
Durham ; Upper Teesdale (J. E. H.).  
Not uncommon ; adult in spring. Known also under *Walckenaera*.
88. *Diplocephalus humilis* (Blackwall).  
Durham (J. E. H.).  
Under stones and at the roots of grass in spring and autumn.
89. *Diplocephalus picinus* (Blackwall).  
Durham (J. E. H.).  
Rare ; adult males in spring amongst grass.
90. *Pocadicnemis pumila* (Blackwall).  
Durham ; Ryhope (J. E. H.).  
Rare ; among grass in spring and summer. Known also under *Walckenaera*.
91. *Cornicularia cuspidata* (Blackwall).  
Durham ; Upper Teesdale (J. E. H.).  
Not rare ; on grassy banks. Known also under *Walckenaera*.
92. *Cornicularia unicornis* (O.P.-Cambridge).  
Durham (J. E. H.).  
Rare ; amongst grass in the spring. Known also under *Walckenaera*.
93. *Troxochrus scabriculus* (Westring).  
Durham (J. E. H.).  
Rare. Known also under *Erigone* and as *Walckenaera aggeris*, O. P.-Cambridge.
94. *Lophomma punctatum* (Blackwall).  
Durham (J. E. H.).  
Not common ; under stones, spring and autumn. Known also under *Walckenaera*.
95. *Peponocranium ludicrum* (O.P.-Cambridge).  
Upper Teesdale (J. E. H.).  
A single adult male in May at an altitude of 1,200 feet. Known also under *Walckenaera*.
96. *Microctenonyx subitaneus* (O.P.-Cambridge).  
Durham (J. E. H.).  
A single adult male in June, among loose stones. Known also under *Walckenaera* and *Tapinocyba*.

## THERIDIIDÆ

The members of this family have eight eyes situated very much like those of the *Argyropidæ*, but the mandibles are usually weak, the maxillæ are inclined over the labium, and the posterior legs have a comb of stiff curved serrated spines beneath the tarsi. The web consists of a tangle of crossing lines, and the spider often constructs a tent-like retreat wherein the egg-sac is hung up.

### 97. *Theridion varians*, Hahn.

Durham ; Wolsingham ; Ryhope (J. E. H.).

A very much smaller species, varying considerably in colour, found abundantly in greenhouses and also amongst shrubs in the open garden. This species makes no tent-like retreat, but sits close to

the one or more pale rounded egg-sacs usually spun up against a beam or window-sill.

### 98. *Theridion denticulatum* (Walckenaer).

Durham ; Wolsingham (J. E. H.).

Also a very small and abundant species, occurring on the outside of windows and outhouses and also on walls and palings. It makes no tent-like retreat and the habits are very similar to those of the last species. Also taken on shrubs and tree trunks.

### 99. *Theridion sisymbrium* (Clerck).

Durham ; Wolsingham ; Ryhope (J. E. H.).

Very common on gorse and holly bushes, where they construct a tent-like domicile and spin up

<sup>1</sup> This species has been expunged from the Brit. List (*Proc. Dorst. Nat. Hist., and A. F. Club*, xxiii. p. 23, 1902). All the examples hitherto recorded as *P. Alpinus* have been ascertained to be *Diplocephalus (Plasiocrærus) latifrons*, O. P.-Camb. ; and I feel no doubt but that the spider recorded here is also of this last species, though I have not had an opportunity of examining the specimen. O. Pickard-Cambridge, April 14th, 1905.

## SPIDERS

within its shelter the small greenish egg-sacs. The young when hatched pass also their earlier days within the tent, but on the death of the mother spider they scatter, taking up positions for themselves amongst the neighbouring foliage. Known also as *T. nervosum*, Blackwall.

### 100. *Theridion pictum* (Walckenaer).

Durham; Teesdale; Wolsingham (J. E. H.).

A very beautiful species, resembling a large example of *T. varians* with a bright red and white dentated band on the dorsal side of the abdomen, found, often abundantly, on holly and other bushes, where they construct a large and very perfectly formed thimble-shaped domicile covered with dry chips of leaves and twigs, often decorated with the wings, legs, wing-cases and other débris of the victims which have served them for food.

### 101. *Theridion ovatum* (Clerck).

Durham (J. E. H.).

A very common species. The female lives in the folded leaf of a bramble, or that of some other shrub, spinning the edges together. Within this domicile she constructs a round sea-green egg-sac about as large as the seed of the sweet-pea. The spider has a pale yellow abdomen with a broad pink central dorsal band or two pink bands, one on each side. The male and female can often be found together within their leafy domicile. This spider is also known under the name *Phyllonethis lineata*.

### 102. *Theridion pallens*, Blackwall.

Durham; Wolsingham; Urpeth (J. E. H.).

This minute Theridioid, pale yellow in colour,

with often a dark, or paler, dorsal spot on the abdomen, lives beneath the leaves of shrubs and trees, laurel, elm, lime, etc., where it spins its minute pear-shaped pure white egg-sac, which rests on its larger end and has several small cusps towards the sharp-pointed stalk.

### 103. *Stratoda bipunctata* (Linnæus).

Durham; Teesdale (J. E. H.).

A dark brown shiny rather flattened spider, living in chinks of walls, angles of windows and crevices in the partitions of old stables, etc., emerging usually at nightfall. The males are remarkable for their very large palpi and also for the possession of a stridulating organ, formed by a series of chitinous ridges in a hollow at the anterior part of the abdomen, which move over some cusps on the conical posterior of the carapace.

### 104. *Euryopsis blackwallii* (O.P.-Cambridge).

Durham; Shincliffe wood (J. E. H.).

A single adult female only. Known also under *Theridion*.

### 105. *Pedanostethus lividus* (Blackwall).

Durham; Teesdale (J. E. H.).

Adult in summer and common under stones in damp places. Known also under *Neriene*.

### 106. *Ero furcata* (Villiers).

Durham; Wolsingham; Teesdale; Ryhope (J. E. H.).

A widespread species, but nowhere abundant; chiefly found amongst thick grass. Known also as *Ero thoracica*, Wider, and *Theridion variegatum*, Blackwall.

## DICTYNIDÆ

The spiders belonging to this family possess three tarsal claws, and the eyes, eight in number, are situated in two transverse rows, the laterals being in contact. The cribellum (or extra pair of spinning organs) and the calamistrum (a row of curving bristles on the protarsi of the fourth pair of legs) are present in all members of the family. They construct a tubular retreat with an outer sheet of webbing, which is covered with a flocculent silk made with the calamistrum from threads furnished by the cribellum.

### 107. *Amaurobius similis* (Blackwall).

Durham; Teesdale (J. E. H.).

A very common species in greenhouses, stables and other outhouses. The males may often be found wandering about the walls of dwelling-houses after nightfall. Known also under the name *Ciniflo*.

### 108. *Amaurobius fenestralis* (Strøm).

Durham; Teesdale; Wolsingham (J. E. H.).

Common under stones throughout the year,

especially in woods and on the moors. Known also as *Ciniflo atrox*, Blackwall.

### 109. *Amaurobius ferox* (Walckenaer).

Birtley (J. E. H.).

A much larger species, shiny purple-black with pale markings, found in cellars and also beneath rocks and stones on the coast or in crevices of banks in the open country. Known also under the name *Ciniflo*.

### 110. *Dictyna uncinata*, Thorell.

Durham; Wolsingham (J. E. H.).

Plentiful on low shrubs, such as box. The female may be found guarding her cocoon in May and June.

### 111. *Dictyna arundinacea* (Linnæus).

Durham; Wolsingham; Ryhope (J. E. H.).

Not very common on gorse-bushes.

# A HISTORY OF DURHAM

## ADDENDA

### COLEOPTERA

#### Beetles

The following species and varieties have been found in the county of Durham since the main list was printed, through the untiring energy and perseverance of Mr. R. S. Bagnall.

#### CARABIDÆ

- Notiophilus, Dum.  
— quadripunctatus, Dj. Rare (Bagnall)  
Nebria, Lat.  
— gyllenhali, Sch. v. rufescens, Ström. Rare. *Derwent Valley* (Bagnall)  
Harpalus, Lat.  
— rufimanus, Marsh. *Winton* (Bagnall). This is instead of *froelichi*, Stm. in the main list; *froelichi* has not yet been found in Durham  
Amara, Bon.  
— anthobia, Vill. One specimen at *Hartlepool* (Wilmington by Ellis)  
— continua, Th. Rare (Bagnall)

#### DYTISCIDÆ

- Platambus, Th.  
— maculatus, L. v. immaculatus, Donis. Very local and rare and unaccompanied by the type. *Gibside* (Bagnall)

#### HYDROPHILIDÆ

- Laccobius, Er.  
— sinuatus, Mots. Common (Bagnall)  
Limnebius, Leach  
— nitidus, Marsh. *Whitburn* (Bold)  
Helophorus, F.  
— brevipalpis, Bed. (?) (Bagnall)  
Sphæridium, F.  
— bipustulatum, F. v. marginatum, F. With the type at *Winton* (Bagnall)  
Cercyon, Leach  
— littoralis, Gyll. v. binotatum, Steph. With the type, but rare. *Roker* (Bagnall)  
— marinus, Th. Not uncommon (Bagnall)

#### STAPHYLINIDÆ

- Leptusa, Kr.  
— analis, Gyll. *Teesdale*, two males (Gardner)  
Quedionuchus, Shp.  
— lævigatus, Gyll. From beneath beech-bark at *Gibside* (Beare, Bagnall). This is the only English record of this Scottish species

#### SILPHIDÆ

- Agathidium, Ill.  
— seminulum, L. *Gibside*, under beech bark and in fungi (Bagnall)  
Anisotoma, Ill.  
— dubia, Kug. v. bicolor, Schm. With the type (Gardner, Bagnall)  
— lunicollis, Rye. One specimen at *Hartlepool* (Gardner)

#### EROTYLIDÆ

- Dacne, Lat.  
— rufifrons, F. Found in numbers in *Teesdale* by Sang (Gardner)

#### LATHRIDIIDÆ

- Lathridius, Hbst.  
— angulatus, Man. *Derwent Valley* and *Weardale*. Rare (Bagnall)

#### CRYPTOPHAGIDÆ

- Atomaria, Steph.  
— fimentarii, Hbst. Rare. *Gibside* (Bagnall)  
— mesomelas, Hbst. Local. *Hartlepool* (Gardner)  
— ruficornis, Marsh. *South Hylton* (Bagnall)

#### PARNIDÆ

- Elmis, Lat.  
— parallelopedus, Müll. *Tyne* (Bold)  
— subviolaceus, Müll. Rare. *Derwent* (Bagnall)

#### SCARABÆIDÆ

- Geotrupes, Lat.  
— spiniger, Marsh. Common (Bagnall)

#### ELATERIDÆ

- Cryptohypnus, Esch.  
— dermestoides, Hbst. v. quadriguttatus, Lap. With the type (Bagnall)  
Corymbites, Lat.  
— quercus, Gyll. v. ochropterus, Steph. With the type. *South Hylton* (Bagnall)

#### TELEPHORIDÆ

- Telephorus, Schæf.  
— nigricans, Müll. v. discoideus Steph. *Derwent Valley* (Bagnall)  
— paludosus, Fall. Near *Rowland's Gill*. Very local. (Beare, Bagnall)

#### CISSIDÆ

- Cis, Lat.  
— micans, Hbst. *Teesdale* (Bagnall)  
— alni, Gyll. (?) *Gibside* (Bagnall)  
— vestitus, Mel. *Teesdale* (Gardner, Bagnall)

#### CERAMBYCIDÆ

- Aromia, Serv.  
— moschata, L. One specimen. *Derwent Valley* (Bagnall)  
Leptura, L.  
— pubescens. *Hartlepool*, introduced (Gardner)  
— testacea. *Hartlepool*, introduced (Gardner)  
— revestita. *Hartlepool*, introduced (Gardner)

#### Semanotus.

- undatus. *Hartlepool*, introduced (Gardner)  
Strangalia, Ser.  
— aurulenta, F. *Hartlepool*, introduced (J. E. Robson)

#### CHRYSOMELIDÆ

- Phytodecta, Kirb.  
— olivacea, Forst. v. litura, F. With the type (Bagnall)



## ADDENDA

NOTE.—On page 110 of the main list, after *Gastroidea polygoni*, L., a whole page of copy has by some means been omitted. The line 'tenella, L. (Bold, Gardner)' should be deleted and the following twenty names inserted in its place.

- Phaedon*, Lat.  
— *tumidulus*, Germ. (Bold, Bagnall, Gardner)  
— *armoraciæ*, L. Very rare (Bold, Bagnall)  
— *cochleariæ*, F. (Bold, Bagnall, Gardner)  
*Phyllodecta*, Kirb.  
— *vulgatissima*, L. (Bold, Bagnall, Gardner)  
— *vitellinæ*, L. (Bold, Robson, Bagnall, Gardner). Also the rare blue variety (Bagnall)  
*Hydrothassa*, Th.  
— *aucta*, F. (Bold, Bagnall)  
— *marginella*, L. (Bold, Bagnall, Gardner)  
*Prasocuris*, Lat.  
— *junci*, Brahm. (Bold, Gardner)  
— *phellandrii*, L. (Bold, Bagnall, Gardner)  
*Luperus*, Geof.  
— *nigrofasciatus*, Gæz. Very local and rare. *Winlaton Mill* (Bagnall)  
— *rufipes*, Scop. (Bold, Bagnall)  
— *flavipes*, L. (Bold, Bagnall)  
*Lochmæa*, Weise  
— *capreæ*, L. (Bold, Gardner)  
— *suturalis*, Th. (Bagnall, Gardner)  
v. *nigrita*, Weise. On the moors with the type (Bagnall)  
*Galerucella*, Crotch  
— *viburni*, Pk. (Bold) *Winlaton Mill* (Bagnall)

- Galerucella*, Crotch  
— *nymphææ*, L. (Bold, Bagnall)  
— *sagittariæ*, Gyll. Rare (Bold)  
— *lineola*, F. (Bold)  
— *tenella*, L. (Bold, Gardner)

### FURTHER ADDENDA

- Longitarsus*, Lat.  
— *anchusæ*, Pk. *Hartlepool* (Gardner)  
*Haltica*, Geof.  
— *oleracea*, L. (?) (Bagnall)  
*Aphthona*, Chev.  
— *nonstriata*, Gæz. *Derwent Valley and Ryton* (Bagnall)  
*Batophila*, Foud.  
— *ærata*, Marsh. One specimen. *Winlaton Mill* (Bagnall)  
*Mantura*, Steph.  
— *rustica*, L. v. *suturalis*, Weise. *Weardale and Derwent Valley* (Bagnall)  
— *matthewsi*, Curt. Very rare. *Hartlepool* (Gardner)  
*Psylliodes*, Lat.  
— *chacomera*, Ill. One specimen. *Hartlepool* (Gardner)  
— *hyoscyami*, L. (?) One specimen. *Hartlepool* (Gardner)

### MORDELLIDÆ

- Anaspis*, Geof.  
— *geoffroyi*, Müll. v. *subfasciata*, Steph. One specimen. *Teesdale* (Bagnall)

### ANTHICIDÆ

- Anthicus*, Pk.  
— *floralis*, L. v. *quisquilius*, Th. With the type (Bagnall)

## DIPTERA

### Flies

#### LIMNOBIDÆ

- Limnophila fuscipennis*, Mg.

#### STRATIOMYIDÆ

- Oxycera pygmæa*, Fln.

#### EMPIDÆ

- Hemerodromia precatoria*, Fln.

#### DOLICHOPODIDÆ

- Achalcus flavicollis*, Mg.  
*Hydrophorus nebulosus*, Fln.  
— *bisetus*, Lw.

#### SYRPHIDÆ

- Platychirus scambus*, Stæg.  
*Syrphus annulatus*, Ztt.  
— *annulipes*, Ztt.  
*Criorrhina ranunculi*, Pz.

#### TACHINIDÆ

- Erigone strenua*, Mg.

#### SAPROMYZIDÆ

- Sapromyza fasciata*, Fln.

## CURCULIONIDÆ

- Apion*, Hbst.  
— *genistæ*, Kirb. *Winlaton Mill* (Bagnall)  
— *minatum*, Germ. Very rare. Near *Winlaton Mill* (Bagnall)  
— *hydrolapathi*, Kirb. *Weardale and Derwent Valley* (Bagnall)  
*Eirrhinus*, Sch.  
— *scirpi*, F. Very local and rare. *South Hylton* (Bagnall)  
*Dorytomus*, Steph.  
— *maculatus*, Marsh. v. *costirostris*, Gyll. (?) One specimen (Bagnall)  
— *melanophthalmus*, Pk. v. *agnathus*, Boh. *Axwell Park and Winlaton Mill* (Beare and Bagnall) (confirmation)

### SCOLYTIDÆ

- Cryphalus*, Er.  
— *tiliæ*, Pz. (?) One specimen (Gardner)  
*Dryocætes*, Eich.  
— *autographus*, Ratz. (?) *Gibside*, one specimen (Bagnall)  
— *alni*, Georg. *Derwent Valley*, under beech bark (Bagnall)  
*Tomicus*, Lat.  
— *sexdentatus*, Börn. One specimen (Gardner)  
— *typographus*, L. (Gardner)  
— *acuminatus*, Gyll. One specimen. *South Hylton* (Bagnall)  
*Pityogenes*, Bed.  
— *chalcographus*, L. (Gardner)

#### CHLOROPIDÆ

- Meromyza pratorum*, Mg.  
*Chlorops læta*, Mg.  
— *gracilis*, Mg.

#### AGROMYZIDÆ

- Agromyza lutea*, Mg.

#### PHORIDÆ

- Phora lutea*, Mg.

# CRUSTACEANS

When Robert Surtees, of Mainsforth, F.S.A., published *The History and Antiquities of the County Palatine of Durham* between eighty and ninety years ago, he gave not the smallest consideration to carcinology. The most direct reference that he makes to the existence of crustaceans is to be found in his third volume, where he describes 'the providential escape of a shrimper,' who 'was pursuing his occupation on the sand island in the Tees.' 'His situation in the river was two miles from the Durham coast, and three from Yorkshire in the midst of the Tees Æstuary, with the wide ocean full in front at the river mouth.'<sup>1</sup> The inference is inevitable that a shrimper would never have been pursuing his avocation in Durham waters without the expectation of catching Durham shrimps. From other remarks made by Surtees in the course of his history it is easy to deduce that sundry remarkable crustaceans, quite distinct from the commercial kinds, have at times visited the county. Notice will be taken of these under the appropriate heads of classification.

Surtees informs us that 'the County of Durham arose gradually out of Northumberland (a term which originally included everything North of the Humber), together with the increasing patrimony of the Church; and, besides the main body of the County, lying betwixt Tyne, Tees, and Darwent, includes several scattered members of that Patrimony: 1. Norhamshire and Islandshire, including Holy Island, and the Farne Isles, and a portion of the mainland extending from the Tweed North and North-west, to the sea on the East, and separated from Northumberland on the South partly by the course of the Till, and partly by an imaginary line. 2. Bedlingtonshire, lying in the heart of Northumberland, betwixt the rivers Blyth and Wansbeck. These are usually termed the North Bishopric, and are included in Chester Ward. 3. The insulated territory of Crake in the wapentake of Bulmer in Yorkshire, which is considered as parcel of Stockton Ward.'<sup>2</sup> However little it could have been foreseen by monks and prelates, the ecclesiastical history of the county is not without its bearing upon the present chapter, and for all the ecclesiastics knew of the matter the bearing might have been more important than it actually is. At a time when religion and law combined to enjoin upon the whole community the use of fish as a necessary element of diet, the unlettered laity and learned churchmen were alike unconcerned about the food on which fishes themselves are nourished. But there is now reason to believe that fishes eat with

<sup>1</sup> Surtees, *Hist. of Dur.*, iii. 141 (1823).

<sup>2</sup> *Op. cit.*, i. pt. ii. p. iii. (1816).



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avidity every sort of crustacean that they can catch and swallow. Nevertheless, the land and freshwater crustaceans of Yorkshire and Northumberland are so little likely to differ from those of the intervening district that they would have been no proper objects for cupidity. On the other hand, in regard to marine species, the wresting of Northumberland and Islandshire from its northern neighbour is calculated to give Durham much assistance in producing a competitive catalogue.

In the present chapter the records referring to Lindisfarne and the Farne Islands will be claimed for Durham. The disentangling of those relating to the other dislocated areas will be neglected as in a great measure impracticable, and if accomplished of doubtful value. The distinctive glory of a county, with respect to its natural history, depends indeed far less on the number of species it may be asserted to possess than on the men who, within its borders, have increased the sum of natural knowledge by their industrious accuracy and have left to those who follow in their footsteps means of testing the fidelity of their observations and records. From this point of view it will be found that Durham has been singularly fortunate in having had long resident within it carcinologists of such eminence as Dr. Norman, F.R.S., and Professor G. S. Brady, F.R.S. The names of some others who have in their measure rendered useful service will be mentioned in due course.

The extent of our subject will be best understood from a brief sketch of the classification here adopted.

Crustaceans can be divided into three principal groups, Malacostraca, Entomostraca, and Thyrostraca. The first of these combines in really close relationship a set of animals which, to judge only by their outward appearance, habits, and names, might be deemed most disunitedly multifarious. They comprise true crabs and false crabs, hermits and lobsters, prawns and shrimps, wood-lice and sand-hoppers. There are also praying shrimps and skeleton shrimps, as different as possible each from other and both from the common shrimps, and 'little lobsters' almost microscopic, and huge fish-lice, and other swarms for which 'Dan Chaucer's well of English undefiled' found not nor is likely to find any vulgar names.

Beginning with the true crabs, stalk-eyed, ten-legged, with short inflexed tails, the Brachyura Decapoda, it is well to observe what is in their case the standard of truth. Their thinly flattened tail or 'pleon,' which is more or less distinctly composed of seven segments, is bound to have the last but one of these segments destitute of appendages. The true crabs are divided into four tribes, Cyclometopa, Catometopa, Oxyrrhyncha, and Oxystomata, very unequally represented in the records here dealt with. To the first of them, the arch-fronted tribe, belongs *Cancer pagurus*, Linn., the great eatable crab, in aspect so familiar to everyone, but for all that having a character which at the first glance distinguishes it not only from all other English crabs, but from the great majority of crabs all over the world. This much valued article of food is taken in more or less abundance all round our coasts, and is specially recorded from the Farne Islands by Mr. George Tate, who also mentions the occurrence there of *Portunus puber* (Linn.) and *P. depurator*.<sup>1</sup> Dr. George Johnston likewise includes it, along with *Carcinus mænas*, in his *Catalogus Animalium et Plantarum quæ in Insula Lindisfarnense visa sunt mense Maio A.D. 1854*.<sup>2</sup> Two other species of *Portunus* were added to the Durham Cyclometopa by Dr. Norman in his *Reports of Deep-Sea Dredging on the North-East Coast of England*, namely *P. holzatus*, Fabricius, and *P. pusillus*, Leach.<sup>3</sup> While all the species mentioned agree in having an arched front to the carapace, the shell of *Cancer pagurus* differs from the rest, not only in being much

<sup>1</sup> *Hist. of the Berwickshire Naturalists' Club*, 1850-1856, iii. 238 (1857).

<sup>2</sup> *Op. cit.*, vol. for 1876, p. 48.

<sup>3</sup> *Nat. Hist. Trans. of Northumb. and Dur.*, i. 12 (1867).



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broad in proportion to the length, but in having its antero-lateral margins nine-lobed instead of five-toothed. *Carcinus maenas* (Linn.), the common shore-crab, though in general shape and appearance very near to the species of *Portunus*, is readily distinguished by the last pair of legs, in which the terminal joint is narrowly lanceolate, not as in the other genus widened into an oval swimming paddle. *Portunus puber*, the velvet crab, is well marked by the pubescent or velvety coat to which it owes its specific and vernacular names. Mr. Alexander Meek says, 'The velvet crab is not uncommon near the Longstone, and is sometimes procured also at other of the outlying Farnes.'<sup>1</sup> In *P. depurator* (Linn.) it should be noticed that the part between the orbits, known as the 'front,' has the centre tooth prominent, whereas in *P. holsatus* this tooth is about on a level with its companions on either side. *P. pusillus*, Leach, is notably smaller than the other species.

The Catometopa owe their title to a depression of the 'front,' which is prevalent among them, but which in no way indicates depression of spirits, for this group includes many of the most active, vivacious, and enterprising crabs that anywhere exist. In this county it is represented only by one of its hundred members, the little pea-crab, *Pinnotheres pisum* (Linn.), of which Mr. Meek reports that 'A male was got four miles off Seaham, 29th September, 1897.'<sup>2</sup> Small as the female is, the male is much smaller. Also his coat is much more firmly calcified than hers. In Bell's opinion the remarkable softness of the female is 'doubtless the cause of its requiring the efficient protection of the shells of Mollusca.'<sup>3</sup> The speculative philosopher in these days would rather argue that it is the consequence, not the cause; just as one may feel certain that hermit crabs have acquired soft twisted tails through residing in firm spiral shells, not that they took to those shells because their tails were soft and twisted.

The Oxyrrhyncha, or 'sharp beaks,' commonly have the front produced to form a rostrum. Of these *Hyas araneus* (Linn.) is recorded by Mr. George Tate from the Farne Islands, and by Dr. Johnston in the Lindisfarne Catalogue along with *Stenorynchus phalangium*; Bell quotes *Stenorynchus tenuirostris* and *Inachus dorsettensis* from Embleton's list of the Crustacea of Berwickshire and North Durham; Dr. Norman in the dredging list for 1864 adds *Inachus dorsettensis* and *Hyas coarctatus* as found on the Durham coast.<sup>4</sup> All these spider crabs, as they are called from the spindly legs of many among them, have the custom of costuming. They do not for this purpose use the spoils of vegetables or of other animals as we do, but the living organisms themselves, which they either allow to settle on their backs or forcibly instal, many parts of the carapace and limbs being provided with hairs and spines of various forms to secure the adhesion of their selected garments. Of the three genera above mentioned *Stenorynchus* or 'narrow beak' is more properly called *Macropodia* or 'long foot,' name and synonym together intimating two of the characters. The two species should be named respectively *M. rostrata* (Linn.), with the *longirostris* of Fabricius for a synonym,<sup>5</sup> in which the rostrum is shorter, and *M. tenuirostris*, Leach, in which it is longer, than the peduncle of the second antennae. Here the eyes are not retractile as they are in the other two genera. In *Hyas* the pleon or tail has all its seven segments distinct in both sexes, whereas in the other two genera this part has the last two segments coalesced. Between *H. araneus* (Linn.) and *H. coarctatus*, Leach, the most obvious difference consists in the circumstance that the carapace of the latter behind the post-orbital process has a strong constriction, to which the specific name *coarctatus* alludes. The French authors MM. Alphonse Milne-Edwards and E. L. Bouvier further observe that the first free joint of the second antennae is broader in front in this species than in the other, and that the hairy crest on the sternum or ventral surface, which is continuous in *H. araneus*, is here interrupted at the centre. That *H. coarctatus* is the smaller of the two, or that its ambulatory legs are relatively shorter, can scarcely be maintained in face of the measurements which they give.<sup>6</sup> For distinguishing *Inachus dorsettensis* (Pennant) from *I. dorynchus*, Leach, the same authors have drawn attention to differences in the third maxillipeds, the fourth joint of these organs in the former species

<sup>1</sup> Northumb. Sea Fisheries Committee Rep. for the year 1902, p. 65.

<sup>2</sup> Op. cit., p. 66.

<sup>3</sup> Brit. Stalk-eyed Crustacea, p. 120 (1853).

<sup>4</sup> To save repetition it may suffice to say that Mr. George Tate's records are all quoted from the *Hist. of the Berwickshire Naturalists' Club*, iii. 328; those of the Lindisfarne Catalogue from pp. 48, 49, in the volume of the same history published in 1876; and Norman's dredging lists for 1863, 1864, from the *Nat. Hist. Trans. Northumb. and Dur.*, i. 23-26 (1867).

<sup>5</sup> M. J. Rathbun, in *Proc. Biol. Soc. Washington*, xi. 155 (1897).

<sup>6</sup> *Resultats des campagnes de l'Hirondelle*, vii. 19 (Monaco, 1896).

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being subtriangular, but in the latter suboval and longer in relation to the non-salient portion of the third joint.<sup>1</sup> Earlier authors have noticed that in the former species the tips of the bifid rostrum are slightly divergent, but not so in the latter.

The Oxystomata are so named not from their sharpened or narrow fronts, but from the narrowing of the oral cavity. This buccal frame or endostome in the other three tribes is more or less quadrate, but here it becomes triangular. In all it is more or less closed on the ventral surface by the third maxillipeds, which when their inner edges meet block out of view the other mouth-organs, namely, the mandibles, first and second maxillæ, and first and second maxillipeds. All these parts though lost to sight should be to memory dear with every student who is desirous of understanding or of improving the classification of the Malacostraca. Norman's dredging list for 1864 provides the Durham coast with two species of one genus from the Oxystome family of the Leucosiidae, these being *Ebalia tuberosa* (Pennant) and *E. cranchii*, Leach. MM. A. Milne-Edwards and E. L. Bouvier distinguish the latter from the former as having the carapace less inflated, more regularly hexagonal, the front more advanced, and the antero-lateral margins entire, not as in the other species having a very characteristic fissure between the hepatic and the branchial regions.<sup>2</sup>

The Macrura, or long-tailed Decapods, are in much closer relation to the Brachyura than a man might suppose who was offered for his meal a choice between the tail of a crab and the tail of a lobster. *Lithodes maia* (Linn.), the northern stone crab, recorded from the Farne Islands by Mr. Tate and from Lindisfarne by Dr. Johnston, is not a true crab, though it is deceptively like one. It has a short uneatable tail, and yet anomalously belongs to the Macrura. But it is the special mark of a Macruran to have appendages on the penultimate segment of the pleon, and of these *Lithodes* is destitute. On the other hand this tail-piece is conspicuously unsymmetrical in the female. This and other characters make it probable that the form has been evolved from among the hermit crabs, from hermits that have been unable to find a hermitage. In the struggle for existence it is likely enough that such unsheltered vagrants would have recourse to folding their tails for protection under their own bodies. Of ordinary hermits *Pagurus bernhardus* (Linn.) is recorded by Mr. Tate from the Farne Islands, by Dr. Johnston from Lindisfarne, by Dr. Norman from the Durham coast. The last author mentions with it in his Durham dredging lists for 1863 and 1864 *P. pubescens*, Kröyer, and *P. lævis*, Thompson. The first two species are now placed in the genus *Eupagurus*, the third in *Anapagurus*, the latter genus being distinguished from the former by the presence of a short curved appendage at the base of the fifth leg on the left side in the male. *Eu. pubescens* is discriminated from *Eu. bernhardus* by the greater slenderness of the hand in the larger cheliped, which is usually on the right, and by the strong pubescence of the ambulatory limbs.

*Porcellana longicornis* (Linn.) is recorded by Mr. Tate from the Farne Islands, and Mr. Meek mentions the capture of 'a specimen from 4 miles off Seaham, 9 September, 1897.'<sup>3</sup> This little smooth species, with a flat, nearly circular carapace, scarcely a quarter of an inch in diameter, and its tail doubled up beneath it, looks remarkably like a crab. But an inspection of the tail shows the macruran mark, appendages to the penultimate segments, well developed. Between this and the common shore species, *P. platycheles* (Pennant), Professor Bouvier has pointed out a singular difference, namely, that in the latter the nerve-chain is confined to the thorax or trunk as in the true crabs, while in *P. longicornis* it runs all along the pleon, as in the lobster-like *Galatheidæ*.<sup>4</sup> Of this family Mr. Tate reports *Galathea strigosa* (Linn.) from the Farne Islands, and Mr. Meek records *Munida rugosa* (Fabricius), 'a splendid male specimen from near St. Mary's Island caught in crab pot, 28 April, 1900.'<sup>5</sup> The latter species is remarkable for its very elongate chelipeds. The specific name given it by Fabricius in 1775 takes precedence of the synonymous *Astacus Bamffius*, Pennant, 1777, and *Munida Rondeletii*, Bell, 1853.

Turning now from the anomalous to the genuine Macrura, in which the pleon, abdomen, or tail has a powerful muscular development, we find no record at present in this county of the common river crayfish, though it is likely enough or almost certain to occur in some of the streams. The common lobster, *Astacus gammarus* (Linn.), under the less proper name of *Homarus vulgaris*, is included in the Lindisfarne catalogue by Dr. Johnston,

<sup>1</sup> Op. cit., xiii. 45 (Monaco, 1899).

<sup>2</sup> Northumb. Sea Fisheries Committee Rep. for 1902, p. 66 (1902).

<sup>3</sup> Ann. Sci. Nat., sér. 7, Zoologie, vii. 93 (1889).

<sup>4</sup> Northumb. Sea Fisheries Committee Rep. for 1902, p. 67.

<sup>5</sup> Op. cit., vii. 54.



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and of the pretty *Nephrops norvegicus* (Linn.) Mr. Meek says that 'large quantities are brought to Shields market by trawlers.'<sup>1</sup> Of shrimps the Lindisfarne catalogue names the common *Crangon vulgaris*, which Mr. Meek also states to be fairly common in the harbour at Holy Island.<sup>2</sup> The same writer says of the closely allied *Crangon allmani*, Kinahan, that 'specimens have been obtained by Dr. Brady in 20 to 40 fathoms off the Durham coast.'<sup>3</sup> *C. nanus*, Kröyer, appears in Dr. Norman's Durham dredging list of 1864. The correct name of this species would appear to be *Philocheirus bispinosus* (Westwood), since Kröyer's species has been successively referred to *Cheraphilus* and *Philocheirus* generically, and is recognised as specifically identical with the earlier *Crangon bispinosus* of Westwood. Dr. Norman says of *Crangon fasciatus*, Risso, 'a single specimen of this shrimp, which had not previously been met with on any part of the eastern coast, was dredged in shallow water within the Fern Islands.'<sup>4</sup> Between *Ægeon fasciatus* (Risso), as this species is sometimes called, and *Philocheirus neglectus* (Sars), it is now known that there is a confusing similarity of colouring, both having transverse brown stripes across the fourth segment of the pleon and the tail-fan. Possibly, therefore, it is the second species rather than the first that should be attributed to the Farne Islands' fauna. In the Durham Dredging list for 1864 Dr. Norman includes *Pandalus annulicornis*, Leach, and *P. brevirostris*, Rathke, *Hippolyte varians*, Leach, and *H. securifrons*, Norman. The first of these should rather be called *Pandalus montagui*, Leach. It has a long rostrum, attains a considerable size, and might claim to be called a prawn, if that name had any really distinctive value. The second species, which Bell in ignorance of Rathke's earlier description named *Hippolyte thompsoni*,<sup>5</sup> has been transferred by Dr. Calman to a new genus, *Pandalina*.<sup>6</sup> Its rostrum is only about half the length of the carapace, and the 'wrist' or antepenultimate joint of the second leg on the right side of the animal is subdivided into only four segments, not into about twenty as in *P. montagui*. *H. securifrons*, marked by a powerful and strongly dentate rostrum, is now placed in the genus *Spirontocaris*, Bate, in which also stands the earlier and perhaps identical *Hippolyte spinus*, Sowerby.

The 'cloven-footed' Schizopoda owe their name to a character of which they by no means have a monopoly, and which needs a little explaining. Between the eyes and the terminal segment of a Malacostracan there are nineteen segments, each of which potentially carries a pair of appendages. Under all reserve for controversial topics, the theoretical appendage may be described as seven-jointed.<sup>7</sup> From the first joint there is often developed a branch called the epipod, and from the second a branch called the exopod. When this latter is present, the remaining five joints are distinguished from it as the endopod or inner branch, the first two joints being then regarded as the stem or peduncle from which the two branches spring. The five pairs of legs in the Brachyura never, and in the Macrura very seldom, carry exopods. In the Schizopoda, however, they are found as swimming branches not only on the five pairs of legs but also on the two or sometimes all the three pairs of maxillipeds that precede them. The comparative study of crustaceans shows indeed a remarkable plasticity throughout the series of appendages. They readily interchange form and function. The mouth-organ of one species is homologous with the claw or the walking-leg of another. Antennae which in one group are fine-drawn elongated threads, in another are developed into powerful spades for digging. The family of Schizopoda with which we are here particularly concerned is known as the Mysidae, and is distinguished from the other families, and in fact from most Malacostraca, by having no true branchiae. That they can dispense with these breathing organs is probably due to the delicacy of their general structure and the vivacity of their movements, so that respiration is effected through the skin. The genera are very numerous. Concerning *Leptomysis linguura*, Sars, Norman writes in 1892, 'This species has been known to me as a member of the British fauna for the last twenty-six years, at which time I took it abundantly between tide-marks at Cullercoats, Northumberland, and within a year or two afterwards at Howden and Seaham Harbour on the Durham coast.'<sup>8</sup> From Seaham he also records *Hemimysis lamornae* (Couch)<sup>9</sup>; *Schistomysis spiritus*, Norman, from 'Blackhall Rocks, Co. Durham, tide-marks,'<sup>10</sup> and *S. ornata* (Sars) from 'off Seaham, on the Durham coast.'<sup>11</sup> All the four species, it should be added, are fully described as well as recorded in Dr. Norman's valuable paper on the British Mysidae. Mr. Meek in 1900

<sup>1</sup> Loc. cit. p. 67.

<sup>2</sup> Ibid., p. 67.

<sup>3</sup> Nat. Hist. Trans. Northumb. and Dur. i. 12.

<sup>4</sup> Ann. Nat. Hist., ser. 7, iii. 37 (1899).

<sup>5</sup> Ann. Nat. Hist., ser. 6, x. 245.

<sup>6</sup> Loc. cit., p. 255.

<sup>7</sup> Ibid., p. 67.

<sup>8</sup> Brit. Stalk-eyed Crustacea, p. 298.

<sup>9</sup> Brit. Stalk-eyed Crustacea, p. 298.

<sup>10</sup> Loc. cit., p. 249.

<sup>11</sup> Loc. cit., p. 256.



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reports, under the name of *Macromysis flexuosa* (Müller), the schizopod which should rather be called *Praunus flexuosus*, from 'Holy Island (where it is very abundant in the harbour and on Fenham flats),' and from the same island *Siriella jaltensis*, Czerniavski, and *S. armata* (Milne-Edwards).<sup>1</sup>

The crustaceans considered down to this point have all agreed in one particular. They have had eyes placed on movable pedicels. There remain to be discussed three groups of Malacostraca which are not stalk-eyed, but which all agree in having eyes not capable of independent movement. These sessile-eyed groups are the Sympoda, Isopoda, and Amphipoda.

The Sympoda can scarcely be said to be more commonly called Cumacea, because they are not commonly called by any name whatever, society at large having been supremely indifferent to the existence of these little, unobtrusive, but intrinsically interesting animals. The list of them connected with Durham would have been reduced to a vanishing point but for a very recent report by Dr. G. S. Brady, 'On Dredging and other Marine Research off the North-East Coast of England in 1901.'<sup>2</sup> Therein he records *Cuma scorpioides* (Montagu) from '30 miles off Sunderland, 45 fathoms'; *Hemilamprops rosea* (Norman) and '*Leucon nasicus*, Kröyer,' from the same situation; *Eudorella truncatula*, Bate, from '5-6 miles off Souter Point, 30 fathoms'; *Eudorellopsis deformis* (Kröyer), as taken 'in the surface net near Sunderland'; *Diastylis rathkei*, Kröyer, from '2½ miles off Souter Point, 21 fathoms'; *Diastylopsis resima* (Kröyer), from the dredging station 5-6 miles off the same Point;<sup>3</sup> *Diastylodes biplicata*, Sars, 'in 45 fathoms 25 miles off Sunderland, muddy sand'; *Leptostylis ampullacea* (Lilljeborg), 'in a depth of 40 fathoms 30 miles off Sunderland'; *Pseudocuma cercaria* (van Beneden) 'in a depth of 4 fathoms off Seaton Carew abundantly,' 'plentifully in the surface net at Sunderland'; and at the two stations above mentioned off Souter Point; *Pseudocuma similis*, Sars, 'in a depth of 28 fathoms off Marsden'; *Campylaspis rubicunda* (Lilljeborg), 'off Hawthorn, 25 fathoms'; *C. glabra*, Sars, 'off Marsden, 28 fathoms'; and *Cumella pygmæa*, Sars, 'in the surface net at Sunderland.'<sup>4</sup>

As the name *Cuma* proves to have been preoccupied,<sup>5</sup> *Bodotria*, Goodsir, takes its place, and, while the general title Cumacea gives place to Sympoda, the family Cumidæ becomes Bodotriidæ, this being one of nine families among which this increasing group is now distributed. It would take long to explain all the peculiarities of form by which the species above named are distinguished. Some features may be mentioned which are common to all or almost all. The carapace leaves uncovered the last five segments of the trunk, the five leg-bearing segments, to which in crabs, lobsters, and decapods in general, it forms a consolidated dorsal shield. Instead of having many pairs of gills, attached to the legs and some of the mouth-organs, as in most of the previously-mentioned Malacostraca, the Sympoda are content to have branchial sacs only (and not invariably) attached to the singular respiratory apparatus of the first maxillipeds. Commonly the anterolateral lobes of the carapace are drawn towards one another in advance of the true front. At least one pair of the legs are furnished with exopods. The tail is usually quite slender compared with the head and trunk, giving the scorpion-like appearance alluded to in the name of *Bodotria scorpioides* (Montagu). The fifth segment of the tail is almost always the longest. The seventh segment or telson varies from conspicuous length and distinctness to evanescence.

Of the fourteen species above recorded four are included in the extensive family of the Diastylidæ, one in the Lampropidæ, two in the Pseudocumidæ. These families are three out of the four which have the telson distinct, this segment being very small in the Pseudocumidæ, but in the other two generally large and conspicuous. *Diastylis rathkei* (Kröyer) is spoken of by Professor Sars in his fine work on the Crustacea of Norway as 'one of our largest and finest species.'<sup>6</sup> The student will therefore be prepared for the task of examining these miniature lobsters by being told that one of the leading forms in Norway is just under two-thirds of an inch long, although specimens from the Siberian polar sea may attain the more encouraging length of just over an inch. In *Diastylopsis resima* (Kröyer) the third and fourth uncovered segments of the trunk are in the female dorsally coalesced. The tip-tilted nose implied in the specific name alludes to the upturning of the pre-frontal

<sup>1</sup> Northumb. Sea Fisheries Committee, Rep. for 1900, pp. 70, 71.

<sup>2</sup> Nat. Hist. Trans. Northumb., Dur. and Newcastle-upon-Tyne, xiv. (1), 87 (1902).

<sup>3</sup> Loc. cit., p. 94.

<sup>4</sup> Loc. cit., p. 95.

<sup>5</sup> Stebbing, in Willey's Zoological Results, pt. v., p. 610 (1900).

<sup>6</sup> Op. cit., iii. 45 (1899).

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lobes which form a pseudo-rostral projection. *Diastylodes biplicata*, Sars, has the telson strongly bent in the male, and in both sexes two oblique pleats or ridges sculpturing the broad carapace. *Leptostylis ampullacea* (Lilljeborg) has the uropods, that is, the appendages of the penultimate segment, very slender, but the front part of the body at least in the female swollen out. This genus is a sort of connecting link between the Diastylidæ and Lampropidæ, since here as in the latter family the third and fourth legs of the female have rudimentary exopods. While, however, the males of Diastylidæ have two pairs of pleopods, those of the Lampropidæ have either three pairs or none. *Hemilamprops rosea* (Norman) has the 'eye very large and conspicuous, with beautiful red pigment and 8 corneal lenses.'<sup>1</sup> The family name refers to the brightness of the eye, but, as in the preceding family, the presence of an effective eye is not one of the essential characters. For *Pseudocuma cercaria* (van Beneden) the name *P. longicorne* (Bate) should be adopted as the earlier, though this specific name is not particularly appropriate, since it refers to the long second antennæ which are found only in the male, and which are found in that sex of other species. No females among the Sympoda have these antennæ elongate. *P. similis*, Sars, preferably called *P. simile*, is a larger and less slender species than the preceding, reaching a fifth of an inch in length or rather more, instead of barely a sixth.

The remaining species of this list agree in having no distinct telson. The Bodotriidæ have five pairs of pleopods in the male, and exopods only on the first pair of legs in both sexes. To this family belongs *Bodotria scorpioides*. The Leuconidæ have the negative distinction of being, so far as is known, always devoid of eyes. They have exopods on the first four pairs of legs in the male, and on the first three pairs in the female, and pleopods on the first two pleon-segments in the male. *Leucon nasica* (not *nasicus*) has an upturned pseudo-rostral projection. In choosing the specific name, no doubt the classically-minded Krøyer inferred that some ancestor of the virtuous Roman, Publius Scipio Nasica, must have had the end of his nose directed heavenward at a similar angle. In *Eudorella truncatula*, Bate, belonging to the same family, there is also upturning of the pseudo-rostral lobes, but it is carried out in such a way that the medio-dorsal line of the carapace is continuous with the margin of the lobes, showing no nasal prominence. Such is the case also in *Eudorellopsis deformis* (Krøyer), with the distinction that here each lobe uplifts a little horn-like process breaking the evenness of the dorsal line. The Campylaspidæ agree with the preceding family in having exopods on the first four pairs of legs in the male, but differ by having them on only the first two pairs in the female, and by having no pleopods in the male, a deficiency which is shared by the females in all the Sympoda. In *Campylaspis* the great swollen carapace is, especially in the gentler sex, in marked contrast with the slender pleon. *C. rubicunda* (Lilljeborg) was named from its bright red colouring, whereas the little *C. glabra*, Sars, is whitish. Finally, the Nannastacidæ are a family in which all the known species have eyes, in contradistinction to the Leuconidæ in which none have them, and to the other families in all of which some species are seeing, and some sightless. In *Nannastacus* the eyes are paired. But in *Cumella* they are confluent, as is customary in this group of animals. *C. pygmæa*, Sars, justifies its name by being only about a tenth of an inch long, even so however not being absolutely the smallest of the Sympoda that has been described.

The Isopoda, so named on the supposition that all their legs were very much alike and pretty nearly equal, come under popular notice chiefly as 'rock-slaters' and 'wood-lice.' They are strongly distinguished from all crustaceans hitherto noticed in this chapter, by the respiratory apparatus. Instead of being sheltered under the carapace and attached to appendages of the head and trunk, in the genuine isopods it is developed in the appendages of the pleon. There is, however, a detachment of anomalous isopods, which some authorities would place in a quite separate division, because their breathing arrangements are in fact in the cephalothorax, and their eyes when present, though not stalked, are on well-defined lobes of the head. Of this set Dr. Brady records *Leptognathia longiremis* (Lilljeborg) from '5-6 miles off Souter Point, 30 fathoms,' and from 'a depth of 4 fathoms off Seaton Carew.'<sup>2</sup> The uropods are relatively long, but the whole animal is less than a sixth of an inch in the female, and less than an eighth in the male, although 'this is the largest and finest of the Norwegian species' of *Leptognathia*.<sup>3</sup>

Several of the normal Isopoda are mentioned by Bate and Westwood as occurring on the Durham coast. Thus, they say of *Æga bicarinata*, Leach, in the family Ægidæ, that

<sup>1</sup> Loc. cit., p. 22.

<sup>2</sup> Nat. Hist. Trans. Northumb., etc., xiv. (1), 95.

<sup>3</sup> Sars, Crustacea of Norway, ii. 27.



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they 'have received it from Dr. Norman, who has taken it on the coast of Durham.'<sup>1</sup> But it is now known that the specimen in question belonged really to *Æga strömii*, Lütken, a stoutly built species, nearly two inches long, with very large contiguous eyes. Schiödte and Meinert, who had Norman's own authority for the correction, make Bate and Westwood guilty of the further mistake, with which they had nothing to do, of stating that the specimen was captured 'at the shore of the town which is called Durham.'<sup>2</sup> Of the family Eurydicidæ (formerly, but less correctly called Cirolanidæ) '*Eurydice pulchra*, Leach,' was sent to Bate and Westwood from the Durham coast also by Norman.<sup>3</sup> This vicious little animal is now again called by its earlier specific name *Eurydice achata* (Slabber). In his dredging list for 1864, *Arcturus longicornis*, Leach, is recorded from the same coast by Dr. Norman, and as *Leacia longicornis* the same species is noted in the Lindisfarne catalogue. In 1892, under the now accepted name *Astacilla longicornis* (Sowerby), Dr. Brady reports it from 2½ miles off Souter Point, 21 fathoms. In the family Astacillidæ, to which this genus belongs, there is a strong contrast between the front pairs of legs, slender and fringed with long setæ, and the three hinder pairs, compact and uncinatæ. On the other hand, in the Idoteidæ, a companion family, though the seven pairs of legs are not strictly speaking all alike or all equal, they are quite sufficiently isopodous to justify the ordinary designation, so far as they are concerned. *Idotea emarginata*, Fabricius, and *I. lineata* (Linn.) are both recorded by Bate and Westwood on Norman's authority from the coast of Durham.<sup>4</sup> Both species have the pleon apically emarginate, but whereas *I. lineata* is parallel-sided, the other form has the peræon or trunk pretty strongly dilated. The Asellidæ are an important family containing our one freshwater isopod, *Asellus aquaticus* (Linn.), a species as curious as it is common, found in ponds and ditches all over England. For its occurrence in this county I have Dr. Norman's manuscript authority. *Janira maculosa*, Leach, taken by the same investigator, represents the family Janiridæ.<sup>5</sup> It carries a scale-like appendage on the third joint of the second antennæ, in this possessing a rare feature. The Munnidæ are represented by *Munna krøyeri*, Goodsir, found by Norman at Seaham<sup>6</sup>; *M. limicola*, Sars, from 21 fathoms off Souter Point; *Paramunna bilobata*, Sars, a bright red species, scarcely more than a twenty-fifth of an inch long, from 30 fathoms off the same Point; *Pleurogonium rubicundum*, Sars, also bright red, a fifteenth of an inch in length, from 21 fathoms off Souter Point and 30 fathoms off Marsden; *P. inerme*, Sars, in size rather larger, in colour more pale, from 30 fathoms off Marsden and Souter Point, and from 40 fathoms 3 miles off Sunderland, all four of these minute slender-limbed forms having been obtained by Dr. G. S. Brady.<sup>7</sup> The mud-dwelling *Munna limicola* is distinguished by the elongation of its legs. Sars found it only at depths between 60 and 300 fathoms. Its addition to the English fauna shows it capable of living a good deal nearer to the surface. Dr. Brady further obtained *Eurycope cornuta*, Sars, from 30 fathoms off Souter Point. This is a small representative of a remarkable family, the Munnopsidæ, in which the inequality and unlikeness between the front and rear sets of trunk-limbs make the term Isopoda in its literal meaning singularly inapplicable. The anterior legs are notable for their tenuity, whereas the three hinder pairs are in accord with the generic name *Eurycope*, meaning 'broad oars.' They have the ultimate and penultimate joints broadly expanded and fringed with long plumose setæ, being thus adapted excellently for swimming paddles after the fashion of the hindmost legs in the fiddler crabs.

The Terrestrial Isopoda, or woodlice, have probably not yet been diligently sought after in this county. Dr. Norman is my authority for the occurrence here of *Philoscia muscorum* (Scopoli); *Trichoniscus pusillus*, Brandt<sup>8</sup>; *Oniscus asellus*, Linn.; *Porcellio scaber*, Latreille; *Metoponorthus pruinosis* (Brandt),<sup>9</sup> of which many years ago he gave me two specimens from his collection at Burnmoor; and *Armadillidium vulgare* (Latreille). Bate and Westwood say of *Oniscus fossor*, Koch, 'The Rev. A. M. Norman records it from Sedgfield, Co. Durham.'<sup>10</sup> But the distinctness of the species from *O. asellus* is somewhat doubtful. *Porcellio scaber* is mentioned in the Lindisfarne catalogue.

The last of the Malacostracan divisions enjoys the name Amphipoda, intended to imply that the feet are extended round about, forward, sideways, and backward. Latreille probably

<sup>1</sup> *Brit. Sessile-eyed Crustacea*, ii. (17), 280 (1867).

<sup>2</sup> *Naturhist. Tidsskrift*, ser. 3, xii. 283 (1879).

<sup>3</sup> *Brit. Sess. Crust.*, ii. 312.

<sup>4</sup> *Loc. cit.* pp. 387, 389.

<sup>5</sup> *Loc. cit.*, p. 340.

<sup>6</sup> *Loc. cit.*, p. 328.

<sup>7</sup> *Nat. Hist. Trans. Northumb. etc.*, xiv. (1), 96.

<sup>8</sup> See also Norman, *Ann. Nat. Hist.*, ser. 7, iii. 73 (1899).

<sup>9</sup> *Loc. cit.*, p. 74.

<sup>10</sup> *Brit. Sess. Crust.*, ii. 472.



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took his idea of the name from the sandhoppers, which contrive to walk on land by spreading out their legs in all directions. Their slow, awkward gait suggests an easy capture, but when the hunter is about to seize his quarry, a stroke of the creature's inflexed tail sends it skipping ever so far out of reach. In allusion to this action Latreille named the primary genus of sandhoppers *Talitrus*, 'a fillip.' *Talitrus locusta* (Linn.) is noted in the Lindisfarne catalogue. *Talorchestia deshayesii* (Audouin), under the name of '*Orchestoidea Deshayesii*,' is recorded by Dr. Norman from Ryhope.<sup>1</sup> This border family of the Talitridæ with its affections divided between land and sea is commonly placed in the forefront, because it is best known to mankind in general. But the Amphipoda are essentially an aquatic tribe, and their most primitive forms are likely to be found among marine species. Many hundreds of these are now known from different parts of the globe, and a goodly number even from the Durham coast, which till lately had but few to boast of.

The extensive family of the Lysianassidæ have the first joint of the upper antennæ remarkably stout, and an accessory flagellum accompanies the principal flagellum or lash of these appendages. Included in the family are the following species: *Acidostoma obesum* (Bate), reported by Meek from depths of 39 to 59 fathoms off Durham<sup>2</sup>; *Orchomene humilis* (Costa), 'Durham coast,' by Dr. Norman, who deems it identical with *O. batei*, Sars;<sup>3</sup> *Hippomedon denticulatus* (Bate) near Farne Islands, Norman,<sup>4</sup> and this together with *H. propinquus*, Sars, in 39 fathoms off Durham, Meek;<sup>5</sup> *Callisoma hopei*, Costa, reported from 'Seaham, Co. Durham,' by Norman, who holds that Costa's species is identical with Bate's later *C. crenatum*, Bate's generic name *Scopelocheirus* meantime lying in wait for revival in lieu of Costa's *Callisoma*, which seems to have been circuitously preoccupied; *Tmetonyx cicada* (O. Fabricius), reported from Durham coast by Norman, who calls the genus *Haplonyx* by an obvious slip of the pen for *Hoplonyx*; *Tryphosites longipes* (Bate and Westwood), Durham coast, Norman,<sup>6</sup> and 'from 39 fathoms off Souter,' Meek;<sup>7</sup> and lastly, *Orchomenella nana* (Krøyer), Durham coast, Norman, who records it as *Tryphosa nana*,<sup>8</sup> in opposition to the view of Professor Sars, a controversy which cannot be fought out here. The name *Hoplonyx* above mentioned was chosen by Sars with reference to the armature of the finger in the first gnathopods. Being preoccupied it must be discarded, and *Haplonyx* cannot be used in its place, since it would imply that the finger (or nail) is unarmed, in contradiction to the very character on which the genus was founded.

The Ampelisidæ are easily recognised by the tapering, apically truncate head, and, when eyes are present, by the shining single lens with which each visual organ is provided externally, although the internal apparatus is sufficiently complex. In *Ampelisca* the eyes, when present, are four in number. Of this genus Norman reports *A. typica* (Bate) from Durham coast; *A. tenuicornis*, Lilljeborg, off Seaham (to which Meek in 1902 adds '2½ miles off Souter Point, 21 fathoms'); *A. spinipes*, Boeck, off Seaham<sup>9</sup>; *A. assimilis*, Boeck (a species scarcely distinct from Costa's *A. diadema*), 'off Marsden, Co. Durham, 10 fathoms'; *A. brevicornis*, Costa, Durham coast<sup>10</sup>; and Meek notes *A. macrocephala*, Lilljeborg, from '5-6 miles off Souter Point, 30 fathoms.'<sup>11</sup> In 1864 Norman's dredging list contains *A. Gaimardii*, Krøyer, and *A. Belliana*, Bate, subsequently recognised as *A. typica* and *A. brevicornis*. The true *A. gaimardii*, Krøyer, now placed in the neighbouring genus *Byblis*, is recorded by Dr. Norman as occurring off Seaham. The same authority reports *Haploops tubicola*, Lilljeborg, both from Durham coast and from near Holy Island.<sup>12</sup> The genus *Haploops* is distinguished from the two preceding genera in that the eyes, when present, are only one pair. The name of the species refers to the habit these animals have of constructing dwelling-tubes out of the mud in which they live, their habitat being in strange contrast with the refinement of structure, colour, and polished surface exhibited in this family.

In the family Haustoriidæ (formerly called Pontoporeiidæ), which, unlike the Ampelisidæ, have an accessory flagellum to the upper antennæ, and their hind limbs adapted

<sup>1</sup> *Ann. Nat. Hist.*, ser. 7, v. 140 (1900).

<sup>2</sup> *Northumb. Sea Fisheries Committee Rep.* for 1901, p. 55.

<sup>3</sup> *Ann. Nat. Hist.*, ser. 7, v. 202 (1900).

<sup>4</sup> *Loc. cit.*, p. 201.

<sup>5</sup> *Northumb. Sea Fisheries Committee Rep.*, p. 55.

<sup>6</sup> *Ann. Nat. Hist.*, ser. 7, v. 207.

<sup>7</sup> *Northumb. Sea Fisheries Committee Rep.*, p. 55.

<sup>8</sup> *Ann. Nat. Hist.*, ser. 7, v. 203.

<sup>9</sup> *Ann. Nat. Hist.*, ser. 7, v. 341.

<sup>10</sup> *Loc. cit.*, p. 342.

<sup>11</sup> *Nat. Hist. Trans. Northumb. etc.*, xiv. (1), 97 (1902).

<sup>12</sup> *Ann. Nat. Hist.*, ser. 7, v. 345.

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for burrowing, the beautifully setose sand-furrowing *Haustorius arenarius* (Slabber) is recorded by Dr. Norman from near Sunderland, the allied *Urothoe marina* (Bate) from near Holy Island, and *Bathyporeia guilliamsoniana* (Bate), doubtfully under the name *B. norvegica*, Sars, as having been taken by Dr. Brady at Whitburn, co. Durham.<sup>1</sup> In this family the fourth pair of pereopods are not greatly longer than the fifth, as they are in the next family, the Phoxocephalidæ. This latter supplies *Harpinia neglecta*, Sars (more properly called *H. antennaria*, Meinert) from Durham coast, Norman.<sup>2</sup> It may be remarked that the Amphipoda, like the Isopoda, have seven pairs of trunk-legs, the first two pairs known as gnathopods being homologous with the second and third maxillipeds in the crabs and other higher crustaceans.<sup>3</sup> Of the Amphilochidæ Meek reports *Amphilochoides pusillus* from 21 fathoms off Souter Point. A species was indeed so named by Sars in 1892, but that distinguished author in 1895 recognised that the form in question was *A. odontonyx* (Boeck), which is probably therefore the species intended also by Mr. Meek.<sup>4</sup> In the Metopidæ Meek records *Metopa palmata*, Sars, from 5-6 miles off Souter Point, 21 fathoms.<sup>5</sup> Of the Stenothoidæ, which are distinguished from the Metopidæ by having no palp to the mandibles, Norman mentions *Stenothoe marina* (Bate) from Durham coast, and *S. monculoides* (Montagu) from Farne Islands.<sup>6</sup> Of the Iphimediidæ *Iphimedia obesa*, Rathke, appears in Mr. Meek's list from the often quoted station 2½ miles off Souter Point.

The very extensive family of the Ædicerotidæ, which have no accessory flagellum to the first antennæ, and the fifth pereopods much longer than the fourth, are represented in Mr. Meek's lists by '*Halimodon mulleri* (Boeck),' which, in my opinion, should be called by the earlier name *Westwoodilla cæcula*, Bate, from 2½ miles off Souter Point;<sup>7</sup> *Monoculodes carinatus* (Bate), 'a young specimen from near the inner Farne Island, 22nd June, 1898';<sup>8</sup> *Synchelidium brevicarpum* (Bate), 'specimens from near Inner Farne';<sup>9</sup> and *Periculodes longimanus* (Bate), from '5-6 miles off Souter Point in 30 fathoms.'<sup>10</sup> The last species was taken also by Dr. Norman, 'off Marsden, co. Durham, 10 fathoms.'<sup>11</sup> It has bright scarlet eyes, and the genus owes its name to the arrangement of the lenses all round the front of the head, producing the effect of a single eye rather than a confluent pair, such as are found in the genus *Monoculodes*. In the Tironidæ (formerly called Syrrhoidæ), which also have more or less coalescent eyes, *Tiron acanthurus* (Lilljeborg) is remarkable as having a pair of minute accessory eyes below the principal pair. It is recorded by Meek in 1892 from 5-6 miles off Souter Point.

The Gammaridæ may be considered the central family of the Amphipoda, as representing the forms from which the rest have in various ways diverged. Whatever in other families may be regarded as commonplace and not peculiar is to be expected in the genus *Gammarus*. That genus also in itself shows considerable adaptability, a character of no mean advantage for the dispersion of a numerous progeny. We find the species *Gammarus locusta* (Linn.) quite at home in deep water, *G. marinus* (Leach) mixing with it on the shore, and *G. pulex* (de Geer) inhabiting fresh water in great abundance, yet all the three are closely alike in appearance and structure. The last of these, under the name of *Gammarus aquaticus*, is evidently intended in Dr. Johnston's Lindisfarne catalogue. It is no doubt only the commonness of all three that has hindered authors from specifying localities where they occur. '*Niphargus subterraneus* (Leach),' another freshwater Gammarid, one of the well-shrimps, occurs in this county, as Dr. Norman kindly informs me by letter, but as to the name he agrees with me in thinking that '*N. aquilex*, Schiödte,' should be preferred, Leach's description of *subterraneus* being too vague to be relied on. To the same family belong *Amathilla homari* (J. C. Fabricius), Durham coast, Norman<sup>12</sup>; *Mæra othonis* (Milne-Edwards), from the same coast<sup>13</sup>; *Cheirocratus assimilis* (Lilljeborg), off Holy Island,<sup>14</sup> described as '*Ch. mantis*, n. sp.,' by Norman in 1865 from the locality mentioned<sup>15</sup>; *Ch. sundevalli* (Rathke), off Holy Island (Norman),<sup>16</sup> and 2½ miles off

<sup>1</sup> Loc. cit., pp. 330-333.

<sup>2</sup> Nat. Hist. Trans. Northumb. etc., xiv. (1), 97.

<sup>3</sup> Crustacea of Norway, i. 222, 690.

<sup>4</sup> Nat. Hist. Trans. Northumb. etc., xiv. (1), 97.

<sup>5</sup> Ann. Nat. Hist., ser. 7, vi. 39.

<sup>6</sup> Nat. Hist. Trans. Northumb., etc., xiv. (1), 97.

<sup>7</sup> Northumb. Sea Fisheries Committee Rep. for 1901, p. 56 (1901).

<sup>8</sup> Loc. cit., p. 56.

<sup>10</sup> Ibid., p. 56.

<sup>12</sup> Ann. Nat. Hist., ser. 6, iv. 120.

<sup>14</sup> Loc. cit., p. 130.

<sup>16</sup> Ann. Nat. Hist., ser. 6, iv. 132.

<sup>2</sup> Loc. cit., p. 337.

<sup>11</sup> Ann. Nat. Hist., ser. 7, vi. 51.

<sup>13</sup> Loc. cit., p. 126.

<sup>15</sup> Nat. Hist. Trans. Northumb. and Dur., i. 13.



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Souter Point (Meek).<sup>1</sup> In the neighbouring family *Calliopiidae*, Meek records *Apherusa borealis* (Boeck), which is probably identical with the earlier *A. cirrus* (Bate), from off Souter Point at 5–6 miles and 2½ miles; and from the latter station *A. jurinei* (Milne-Edwards). From the same two stations the same author notifies *Melphidippella macra* (Norman), belonging to the family *Melphidippidae*. Of the *Aoridae* he records in his earlier list *Aora gracilis*, Bate, found in Holy Island harbour, and in his later list the same species together with *Lembos websteri*, Bate, at 2½ miles off Souter Point; also from the latter locality several members of the *Photidae*, *Photis reinhardi* (Kröyer), *Gammaropsis maculata* (Johnston) under the later name *G. erythrophthalmus*, Lilljeborg, the same species also appearing as *Eurystheus erythrophthalmus*, Lilljeborg, in Norman's dredging list for 1864; *G. palmata* (Stebbing and Robertson) under the later name *G. nana* (Sars); *Podocerospis excavata* (Bate), for which *P. rimapalma* (Bate) is to be preferred; and, lastly, *Megamphopus cornutus*, Norman. He also gives from this locality *Erichthonius hunteri* (Bate) in the family *Podoceridae*, from which it should be transferred to the *Corophiidae*, to which also belongs *Unciola planipes*, Norman, 'dredged in July, 1864, off Holy Island.'<sup>2</sup>

All the preceding Amphipoda are included in the tribe Gammaridea. From these the Hyperiidea are distinguished, among other things, by having no 'palp' to the maxillipeds. In other words, the fourth pair of mouth organs are here devoid of all the last four joints. In most Gammaridea these joints are well developed, and are never all of them wanting. Norman records that the Hyperiid *Parathemisto obliqua* (Kröyer) has been taken by Dr. Brady off the mouth of the Tees.<sup>3</sup>

The tribe Caprellidea, distinguished from the other two by the degradation of the tail-part or pleon, has a rather less niggardly representation. From the often-mentioned stations off Souter Point Mr. Meek's list contains, of the family Caprellidae, *Pariambus typicus* (Kröyer), a skeleton shrimp of the most unassuming proportions, with a length not a third of an inch, no breadth worth speaking of, and of its legs one pair dwindled and two pairs altogether lost. *Phthisica marina* (Slabber), taken at 2½ miles off Souter Point, is better off in the matter of legs, and longer, but still a poor wisp of a thing, the generic name implying that nothing but a severe attack of phthisis could account for its wasted appearance. The whale-lice are first cousins to these skeletons, but have a more flourishing aspect, due perhaps to easy feeding on the oleaginous skin of the whale. That some of these Cyamidæ have been at times found on the Durham coast may be fairly argued from the circumstance that 'In 1387 Bishop Fordham issued a Commission, . . . stating in the preamble that all whales, sturgeons, porpoises, and thulepolls, wrecked on the coast of the royal franchise of Duresme by violence of the Sea, were the undoubted right of himself and his predecessors.'<sup>4</sup> It could not have been worth the bishop's while to claim for his predecessors the right to whales, if none of these monsters had ever been known to arrive. But if the whales came, the suitable species of *Cyamus* would certainly have made it their business to come with them.

The Entomostraca are far from having that fixed number of segments which forms so remarkable a bond of union among the Malacostraca. On the contrary, the segments here may be either fewer than these or considerably more numerous. They are fewer in all the groups at present recorded from this county. These groups contain as a rule animals of very small size, some of them quite minute. To discriminate the numerous species would be impracticable without a fulness of detail which is here out of the question. Three orders have to be discussed, the Cladocera, Ostracoda, and Copepoda.

The Cladocera are named from their biflagellate second antennæ. These form conspicuous appendages of the more or less distinct head, which carries also the first antennæ, the single eye, the palps, the mandibles and the one pair of maxillæ, the body with from four to six pairs of legs being for the most part included in the bivalved chitinous cover or carapace. About three dozen species of these little 'water-fleas,' as the ignorant are pleased to call them, have been recorded from the waters of Durham. The division of the Calyptomera embraces those in which the feet are well covered by the shell, though that is often too transparent to conceal them. This division is subdivided into two tribes, the Ctenópoda and Anomópoda. In the former stands the family Sididae, to which belong *Sida crystallina* (O. F. Müller) and

<sup>1</sup> *Nat. Hist. Trans. Northumb. etc.*, xiv. (1), 98.

<sup>2</sup> *Op. cit.*, i. 15.

<sup>3</sup> *Ann. Nat. Hist.*, ser. 7, v. 131 (1900).

<sup>4</sup> *Surtees, Hist. Dur.*, i. (2), 17.



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*Diaphanosoma brachyurum* (Liévin; Norman in litt.).<sup>1</sup> The four following families belong to the second tribe. The Daphniidæ furnish this county with *Daphnia pulex* (de Geer) from Shotton (Brady); *D. obtusa*, Kurz, taken by the Rev. Canon Norman at Bishopton (Brady); *D. hamata*, Brady, taken by Norman 'in a pond near the East Gate of Lambton Park' (Brady); *D. lacustris*, Sars, from Holy Island Lough (Meek and Brady); *D. magna*, Straus, which Brady calls *Dactylura magna*, remarking as to its occurrence: 'Dr. Norman has found it at Layton Farm, near Sedgfield, co. Durham, and I have myself taken it in a pond at Canal Farm, High Barnes, near Sunderland' (Brady); *D. longispina* (O. F. Müller); (Norman in litt.); *Ceriodaphnia quadrangula* (O. F. Müller), Holy Island Lough (Meek and Brady); *C. reticulata* (Jurine); *C. pulchella*, Sars; *C. laticaudata* (O. F. Müller); this and the two preceding from Durham county proper (Norman in litt.); *Simocephalus vetulus* (O. F. Müller), Holy Island Lough (Meek and Brady), and from Durham proper (Norman in litt.) under the new name *Simosa vetula*, recently substituted by Norman, *Simocephalus* being preoccupied. The Bosminidæ are represented by *Bosmina longirostris* (O. F. Müller); (Norman in litt.). The Macrotrichidæ comprise *Macrothrix laticornis* (Jurine), found 'at Fardingslake, and in the Glebe Engine Pond, Sunderland,' by G. S. B. (Norman and Brady); *M. hirsuticornis*, Norman and Brady, concerning which these authorities say in 1867, 'the only locality at present known for this new species is a slowly running stream at Ashburn, Sunderland, where it was found by G. S. B. in 1864'; *Ilyocypris sordidus*, Liévin, for which the same writers report 'two localities in the neighbourhood of Sedgfield, where *I. sordidus* first occurred in Britain, and was noticed by Mr. Norman.' The Chydoridæ are numerous represented, containing *Chydorus sphaericus* (O. F. Müller); *Euryceus lamellatus* (O. F. Müller); *Acroperus harpæ*, Baird; all three signalised alike by (Meek and Brady) and by (Norman in litt.); *Alona tenuicaudis*, Sars, from Sedgfield; *A. costata*, Sars, 'found in old colliery pond at Bishop Middleham, and in a pond near Houghton-le-Spring'; *A. guttata*, Sars, 'first found in Great Britain in a small pool at East Herrington,' subsequently 'also in ponds at Marsden'; *A. testudinaria* (Fischer), since transferred to *Graptoleberis*, from 'Boldon Flats, Fardingslake, and Hardwicke'; *Alonopsis elongata*, Sars; *Acroperus nanus*, Baird, which has since become *Alonella nana* (Baird); *Pleuroxus lævis*, Sars, 'at "Hell Kettles," near Darlington'; *P. trigonellus* (O. F. Müller), found 'by A. M. N. in Hardwicke Lake and the Forge Dam, near Sedgfield,' and by 'G. S. B. at "Hell Kettles," county of Durham'; the foregoing eight species being recorded in 1867 (Norman and Brady), and *Alona costata* also in 1902 (Meek and Brady). Norman's manuscript list adds *Alona quadrangularis* (O. F. Müller); *A. affinis*, Leydig; *Pleuroxus aduncus* (Jurine); *P. uncinatus*, Baird; *Peracantha truncata* (O. F. Müller); *Leydigia leydigii*, Schödler. As a sample of the characters which distinguish these families, it may be mentioned that the first antennæ of the female are fixed in the Bosminidæ, but movable in the Macrotrichidæ; the five pairs of feet are equally spaced in those two families, but in the Daphniidæ the fifth pair is remote from the others; in all the three the second antennæ have the dorsal branch or flagellum four-jointed and the ventral one three-jointed, but in the Chydoridæ both branches are three-jointed. From the first two families and part of the third the Chydoridæ are also separated by the curious characteristic of having a looped intestine. To maintain the extraordinary activity which some species in this family display, one may surmise that a large supply of food is needed, and the storage of this within their minute shells may well need an unusual arrangement of the digestive apparatus.

The Gymnomera are distinguished from the Calyptomera by having the carapace small, not covering the thoracic feet, of which in the tribe Onychopoda there are but four pairs. Its single family, the large-eyed Polyphemidæ, is represented in the fresh waters of Durham by *Polyphemus pediculus* (Linn.), (Norman in litt.); and in the sea by *Evadne nordmanni*, Lovén, and *Pleopis polyphemoides*, Leuckart, both reported by Brady from 'Durham coast (off Ryhope), common.'<sup>2</sup> For *Pleopis* the generic name now accepted is Lilljeborg's *Podon*. This has the marsupial part round-ended, as distinguished from *Evadne*, in which that part is triangular.

<sup>1</sup> To save a confusing repetition of references it may be expedient here to note that 'Norman in litt.' applies to a manuscript list kindly supplied me by Dr. Norman; localities attested by the name of '(Brady)' are from that author's paper 'On the British species of Entomostraca belonging to Daphnia and other allied genera,' in *Nat. Hist. Trans. Northumb., Dur., and Newcastle-upon-Tyne*, xiii. (2), 217-248; the localities given from '(Meek and Brady)' refer to Mr. Meek's Holy Island collection determined by Dr. Brady, in the Report for 1902 of the *Northumberland Sea Fisheries Committee*, p. 49 (1902); the data referred to '(Norman and Brady)' are from the *Nat. Hist. Trans. Northumb. and Dur.*, i. 354, etc. (1867).

<sup>2</sup> *Nat. Hist. Trans. Northumb. and Dur.*, i. 30 (1867).

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They are both devoid of the neck-like constriction which distinguishes head from trunk in *Polyphemus*.

As to the Entomostraca taken from Holy Island Lough by Mr. Meek the following explanations are given :—‘ This gathering was made on 27th June. The pond is a shallow one. The average depth is about 3 feet, and the bottom consists of soft black mud. It is to a large extent overgrown with *Equisetum limosum*, amongst which the coot and the black-headed gull meet. It gives origin to a small stream which runs close to the village, and was until recently used more or less for domestic purposes. The only fish life obtained was the three-spined stickle-back. . . The gatherings were made by means of a bottom net worked from a canvas boat kindly lent for the purpose by Mr. Newbigin. The proceeds consisted chiefly of *Simocephalus vetulus*, all the other species, with the exception of *Pionocypris vidua*, *Cyclops viridis*, and *C. serrulatus*, being very poorly represented.’

The Ostracoda are so completely enclosed between their valves that externally they might be taken for little molluscs rather than crustaceans. The body is seldom segmented, and never carries more than seven definite pairs of appendages. The tribe Myodocopa generally have a heart, which the other tribe, the Podocopa, manage to do without. From the former Brady and Norman report *Philomedes brenda* (Baird), belonging to the family Cypridinidae, off the coast of Durham, near the Dogger Bank, 1862 (A. M. N.),<sup>1</sup> and in the family Polycopidae *Polycopse orbicularis*, Sars, at ‘several points off the coasts of Durham and North Yorkshire.’<sup>2</sup> These are interesting marine species, over which it is impossible to linger, in view of the vast number of species, both freshwater and marine, from the other tribe, which the researches and writings of Brady and Norman have brought to light in connexion with this county.

In the Podocopa the family Cyprididae supplies the district with *Cypria exsculpta* (Fischer), found at Seaton Carew ;<sup>3</sup> *C. ophthalmica* (Jurine), (N. in litt.) ; *C. lævis* (O. F. Müller) and *C. serena* (Koch), from Holy Island Lough (Meek and Brady), the two latter species, under the more recently accepted name *Cyclocypris*, being reported also from Durham proper (N. in litt.) ; *Cypris fuscata*, Jurine (N. in litt.) ; *C. incongruens*, Ramdohr (transferred to *Cyprinotus* by Sars),<sup>4</sup> Rainton and Seaton Carew ; *C. pubera*, O. F. Müller, freshwater pond on Seaton Marsh ; *C. virens* (Jurine), between the typical shape of which and the variety *ventricosa* ‘an intermediate form has been found by A. M. N. at Lumley Dene ; *C. elliptica*, Baird, ‘found in a pond in Foxton Lane, Sedgfield, co. Durham (A. M. N.)’ ; *C. reticulata*, Zaddach, at Foxton, near Sedgfield ; *C. ornata*, O. F. Müller, ‘the only known British specimens of this species were taken in a pond at Shotton Hall, co. Durham, in May, 1855 (G. S. B.)’ ; *Cyprinotus salinus* (Brady), originally established as *Cypris salina*, of which Brady says, ‘I first met with *C. salina* in a cooling pond at Monkwearmouth Colliery, where it lives in great numbers together with *Cypridopsis aculeata*, *Cypris reptans*, and other species, in water which often reaches a temperature of 100° Fahr., and is so impregnated with earthy salts as to deposit a thick coating of carbonate of lime on the leaves of the plants which it supports’ ;<sup>5</sup> *Erpetocypris reptans* (Baird), the species just mentioned as *Cypris reptans* ; *E. strigata* (O. F. Müller), ‘stream in Fulwell Cemetery, Sunderland (G. S. B.)’ ; *E. tumefacta* (Brady and Robertson), ‘near Sunderland (G. S. B.)’ ; *Ilyodromus olivaceus* (Brady and Norman) (N. in litt.) ;<sup>6</sup> *Prionocypris serrata* (Norman)<sup>7</sup> (N. in litt.) ; *Pionocypris vidua* (O. F. Müller), Holy Island (Meek and Brady), Durham proper (N. in litt.) ; *P. obesa* (Brady and Robertson) (N. in litt.) ; *Cypridopsis aculeata* (Lilljeborg), Cowpen Marshes (A. M. N. 1868), Monkwearmouth Colliery, and very ‘abundant at Monkton Paper Mills, co. Durham (G. S. B.)’ ; *C. villosa* (Jurine), found by Brady ‘in ponds at Silkswell and Fulwell, near Sunderland’ ;<sup>8</sup> *Potamoxypris fulva*, Brady, ‘at Fulwell Cemetery, Sunderland’ ; *Notolomas monachus* (O. F. Müller), many places in Durham ;<sup>9</sup> *Candona candida* (O. F. Müller), of which ‘the variety *claviformis*

<sup>1</sup> *Trans. R. Dublin Soc.*, ser. 2, v. 655 (1896).

<sup>2</sup> *Loc. cit.*, p. 707.

<sup>3</sup> *Trans. R. Dublin Soc.*, ser. 2, iv. (1889). *Monograph of the Podocopa* by Brady and Norman. Where no other reference is given the reader is requested to understand that the special localities for the Podocopa are taken from this work. (N. in litt.) signifies that the occurrence of the species in the county of Durham proper is guaranteed by Dr. Norman’s manuscript list.

<sup>4</sup> *Crustacean Fauna of Central Asia*, pt. iii, p. 28 (1903).

<sup>5</sup> *Trans. Linn. Soc.*, London, xxvi. 368 (1868). Brady’s *Monograph of the British Ostracoda*. This work will be cited as *Mon. Brit. Ostrac.*

<sup>6</sup> *Trans. R. Dublin Soc.*, ser. 2, v. 724.

<sup>7</sup> *Loc. cit.*, p. 725.

<sup>8</sup> *Mon. Brit. Ostrac.*, p. 377.

<sup>9</sup> *Loc. cit.*, p. 381.



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was found in a pond at Sedgfield' by Norman; *C. neglecta*, Sars (N. in litt.); *C. lactea* Baird (N. in litt.); *C. zenkeri*, Sars, of which Brady and Norman say in 1896, 'it is a British species, having been found by A. M. N. in a pond at Ferryhill in the county of Durham';<sup>1</sup> *C. compressa*, Koch,<sup>2</sup> for which, under the name *C. pubescens* (Koch), Brady and Norman in 1889 give among other localities, 'pond in Lumley Dene, Seaton Carew Marshes, and Sedgfield, all in the county of Durham'; *C. zetlandica*, G. S. Brady, with which *C. Weltneri*, Harting, is synonymous (N. in litt.); *Ilyocypris gibba* (Ramdohr) (N. in litt.); *I. bradyi*, Sars (N. in litt.); the rare marine species *Pontocypris acupunctata*, Brady, 'off Marsden, Durham, 10 fathoms (G. S. B.)'; *Argillacea cylindrica*, Sars, 'off Seaham and Marsden, Durham coast (G. S. B.)'.

The family Cytheridæ enriches the county with *Cythere lutea*, O. F. Müller, 'abundant in tide pools on the coasts of Northumberland and Durham,'<sup>3</sup> including *C. viridis*, Brady (not Müller), 'in tide-pools near Sunderland';<sup>4</sup> *C. pellucida*, Baird, on the union of which with *C. castanea*, Sars, and its distinction from *C. confusa*, Brady and Norman, the monograph of 1889 should be consulted; *C. tenera*, Brady, 'off Seaham Harbour, Durham, 15 fathoms'; *C. albomaculata*, Baird, 'on the Durham coast';<sup>5</sup> the blind mud-lark *C. limicola* (Norman), Durham coast;<sup>6</sup> *C. (?) semipunctata*, Brady, off coast of Durham; *C. gibbosa*, Brady and Robertson, 'Seaton Carew Marshes'; *C. borealis*, Brady, of which it is said that 'the only British station in which this species has been found is at Seaton Carew, in the county of Durham, on mud-covered rocks, near low-water mark (G. S. B.)'; *C. quadridentata*, Baird, off coast of Durham; *C. emaciata*, Brady, off Durham; *C. tuberculata*, Sars, 'in 40 fathoms,'<sup>7</sup> this and the next five species from the same coast being referred to *Cythere* in 1889, but in 1896 transferred to *Cythereis*; *C. concinna* (Johnston); *C. finmarchica* (Sars); *C. angulata* (Sars); *C. dunelmensis* (Norman); *C. jonesii* (Baird); the freshwater species *Limnocythere inspinata* (Baird), from 'Hardwick Lake and Raby Park, county Durham (Rev. A. M. Norman); Fulwell Cemetery, Gibside, and in a millstream at Hedworth, county Durham (G. S. B.)';<sup>8</sup> *Cytheridea elongata*, Brady, 'in tide-pools at Sunderland,' 'in all probability a washed-up specimen, as the valves were empty';<sup>9</sup> *C. papillosa*, Bosquet, off the coast of Durham; *C. torosa* (Jones), Sedgfield, in freshwater (A. M. N.);<sup>10</sup> *C. punctillata*, Brady, Seaton Carew; *Eucythere declivis* (Norman), Durham coast, including *Eu. argus* (Sars), from 'off Holy Island,' and *Eu. anglica*, Brady, 'dredged off the Durham coast (G. S. B.)';<sup>11</sup> *Krithe bartonensis* (Jones), off the coast of Durham; *Loxoconcha impressa* (Baird), rock-pools, Sunderland;<sup>12</sup> *L. tamarindus* (Jones), 'in tide-pools, Sunderland,' as well as in 30 fathoms depth off Durham coast;<sup>13</sup> *L. guttata* (Norman), deep water off Durham coast;<sup>14</sup> *L. multifora* (Norman), Durham coast;<sup>15</sup> *L. pusilla*, Brady and Robertson, 'off Seaton Carew, co. Durham, 4 fath.'; *Xestoleberis depressa*, Sars, Durham coast;<sup>16</sup> *Cytherura nigrescens* (Baird), 'in rock-pools at Sunderland';<sup>17</sup> *C. producta*, Brady, 'off the coast of Durham'; *C. clathrata*, Sars, coast of Durham; *C. acuticostata*, Sars, 'off Holy Island';<sup>18</sup> *Cytheropteron latissimum* (Norman), Durham coast;<sup>19</sup> *C. nodosum*, Brady, off coast of Durham; *Bythocythere constricta*, Sars, *B. turgida*, Sars, and *B. simplex* (Norman), all three off the aforesaid coast, the last having also been taken off Holy Island in 45 fathoms;<sup>20</sup> *Pseudocythere caudata*, Sars, off Holy Island;<sup>21</sup> *Sclerochilus contortus* (Norman), Durham coast.<sup>22</sup>

To the family Paradoxostomatidæ are assigned *Paradoxostoma variabile* (Baird); *P. normani*, Brady; *P. hibernicum*, Brady; *P. bodgei*, Brady; *P. flexuosum*, Brady; all from various depths off the coast of Durham; and *Machærina tenuissima* (Norman), taken off the same coast between 15 and 30 fathoms.

From the vast and ancient group of the Ostracoda we pass to another which is also very extensive, but less adapted for fossil preservation. The Copepoda are not enclosed in a bivalved

<sup>1</sup> *Trans. R. Dublin Soc.*, ser. 2, v. 730.

<sup>2</sup> *Mon. Brit. Ostrac.*, p. 396.

<sup>3</sup> Loc. cit., p. 403.

<sup>4</sup> Ibid.

<sup>5</sup> Loc. cit., p. 422.

<sup>6</sup> Loc. cit., pp. 430, 431, 475.

<sup>7</sup> Loc. cit., p. 436.

<sup>8</sup> Loc. cit., p. 450 (compared with *Mon.* 1889, p. 185).

<sup>9</sup> *Mon. Brit. Ostrac.*, p. 438.

<sup>10</sup> Loc. cit., p. 446.

<sup>11</sup> Loc. cit., p. 451.

<sup>12</sup> Loc. cit., p. 456.

<sup>13</sup> Loc. cit., p. 728.

<sup>14</sup> Loc. cit., p. 397.

<sup>15</sup> Loc. cit., p. 406.

<sup>16</sup> Loc. cit., p. 420.

<sup>17</sup> Loc. cit., p. 426.

<sup>18</sup> Loc. cit., p. 434.

<sup>19</sup> Ibid.

<sup>20</sup> Loc. cit., p. 440.

<sup>21</sup> Loc. cit., p. 448.

<sup>22</sup> Loc. cit., p. 454.



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shell, but allow us to distinguish eleven segments, the first, however, being composite, to form what may be called the head, carrying the two pairs of antennæ, the mandibles, first and second maxillæ, and the maxillipeds. The next five segments are thoracic, each normally with its pair of appendages, and these are followed by five which bear no appendages, forming the tail, abdomen, or pleon. Still it sometimes happens that the last thoracic segment seems more closely united with the pleon than with the rest of the thorax. Hence Giesbrecht draws a line between the Gymnoplea which have the pleon bare of limbs, and the Podoplea, which have, or, more strictly speaking, seem to have a pair of limbs on the pleon.

Since it will be impossible here to explain or discuss all the latest changes in classification, and since our knowledge of Durham localities for most of the species about to be mentioned is derived from the *Monograph of British Copepoda* which Dr. G. S. Brady wrote for the Ray Society, it will be convenient to follow the arrangement adopted in the volumes of that learned and well-known work. The distribution, however, of the genera into families is based on systematic essays of later date, which still show some variety of opinion among leading experts, and make it clear that new students of the Copepoda will not find their field of research already exhausted. To the family Temoridae are assigned *Eurytemora velox* (Lilljeborg), recorded by Brady as found 'in salt-marshes at Hylton (county Durham),' with the added remark, 'the few specimens which I have recorded as being taken in the sea at Sunderland, must, I think, be looked upon as waifs and strays';<sup>1</sup> *Eu. affinis* (Poppe), 'in pools near Hartlepool Slake, county Durham,' this being, according to Brady, a species apparently very liable to be confused with neighbouring forms.<sup>2</sup> The family Diaptomidae includes *Diaptomus castor* (Jurine), from 'ponds at Chester Road, Sunderland; Shotton and Wardley, county Durham (G. S. B.).'<sup>3</sup> The family Centropagidae offers *Centropages hamatus* (Lilljeborg), of which Brady says that it is not uncommon at the surface in the open sea, adding, 'I have once taken it between tide-marks, amongst Algæ in rock-pools, near Ryhope.'<sup>4</sup> The family Parapontellidae is represented by *Parapontella brevicornis* (Lubbock), 'in tide-pools on the Durham coast.' For *Misophria pallida*, Boeck, 'taken off Hawthorn (Durham coast) on a sandy bottom in a depth of 27 fathoms,' Sars establishes a family Misophriidae in the great group of Arpactioida.<sup>5</sup> The family Pseudocyclopidae (not to be confused with the Pseudocyclopiidae) has *Pseudocyclops crassicornis*, Brady, dredged off Seaham Harbour in 20-30 fathoms. The family Cyclopidae is more copiously represented, containing *Oithona spinifrons*, Boeck, possibly the same as the earlier *O. belgolandica*, Claus, observed 'in the North Sea off Sunderland'; *Cyclopina littoralis*, Brady, 'amongst weeds between tide-marks,' Ryhope, and off the Durham coast in depths of 4-45 fathoms; *C. (?) ovalis*, Brady, 'one specimen only taken off Sunderland in the surface net'; *Cyclops strenuus*, Fischer, 'Seaton Marsh, county Durham';<sup>6</sup> *C. bicuspidatus*, Claus, 'in gatherings from Lambton Park (A. M. N.)';<sup>7</sup> *C. viridis* (Jurine), with *C. fuscus* and *C. albidus* of the same author, reported in Norman's manuscript list; *C. insignis*, Claus, 'at Hartlepool, where it occurred in brackish pools near the border of the slake'; *C. serrulatus*, Fischer (N. in litt.); *C. fimbriatus*, Fischer, 'in gatherings by the Rev. Dr. Norman from Rainton Meadows, county Durham';<sup>8</sup> *C. kaufmanni*, Uljanin, a rare species hailing from Turkestan, taken freely by Norman from 'pond in Lambton Park (Durham),' and since found by Brady in Hampshire, not known elsewhere;<sup>9</sup> *C. belleri*, Brady, taken at Whitburn, but subsequently regarded with doubt;<sup>10</sup> *C. phaleratus*, Koch, pond at Gibside; *C. salinus*, Brady, 'got at Holy Island';<sup>11</sup> *Pterinopsyllus insignis*, Brady, the earlier generic name, *Lophophorus*, being discarded on account of pre-occupation,<sup>12</sup> 'three specimens only of this very distinct and beautiful Copepod occurred in a dredging made by Mr. Robertson and the Rev. A. M. Norman, six miles off the Durham coast, near Hawthorn, on a sandy bottom, and in a depth of 27 fathoms.'

<sup>1</sup> *Nat. Hist. Trans. Northumb., Dur., and Newcastle-upon-Tyne*, xi. (1), 106 (1891). (For the synonymy of the species the student should compare Sars, *Crustacea of Norway*, iv. 100. 1903.)

<sup>2</sup> *Loc. cit.*, p. 108.

<sup>3</sup> *Loc. cit.*, p. 94.

<sup>4</sup> *Monograph of the Free and Semi-parasitic Copepoda of the British Islands*, by G. Stewardson Brady, M.D., F.L.S., etc., vol. i. Ray Society (1878). It may be accepted that species named and explanatory quotations, without further reference, are given on the authority of this work.

<sup>5</sup> *Crustacea of Norway*, v. 4 (1903).

<sup>6</sup> *Nat. Hist. Trans. Northumb. etc.* xi. (2), 73.

<sup>7</sup> *Loc. cit.*, p. 79.

<sup>8</sup> *Loc. cit.*, p. 91.

<sup>9</sup> *Loc. cit.*, p. 89.

<sup>10</sup> *Loc. cit.*, p. 92.

<sup>11</sup> *Nat. Hist. Trans. Northumb. etc.*, new ser. i. 5 (1903).

<sup>12</sup> *Monograph*, iii. 23, Ray Soc. (1880).

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The family Notodelphyidæ, in which the egg-pouch of the female forms a strange dorsal protuberance, furnishes *Notodelphys cerulea*, Thorell, 'in *Ascidia parallelogramma*, off Hawthorn'; *N. agilis*, Thorell, in Ascidians taken off the coast of Durham, at depths of 20–30 fathoms. The family Doropygidæ, with a like peculiarity, contains *Doropygus pulex*, Thorell, of which many immature specimens have been found in Ascidians dredged off the coast of Durham; *D. porcicauda*, Brady, found in *Ascidia parallelogramma* dredged from 27 fathoms off Hawthorn. The family Ascidiicolidæ, which is extended by some authors to embrace a large assortment of families similar in their habits, in a restricted sense contains *Ascidicola rosea*, Thorell, from Ascidians dredged off the Durham coast, this species (as noted by Mr. Eugène Canu) sometimes occurring in great abundance actually in the stomach of a large *Ascidiella*,<sup>1</sup> a position one might suppose more suited for their sepulchre than their living-room.

The great group of the Arpacticoida or family Arpacticidæ in the large sense has been variously divided into subfamilies or restricted families. As these are at present more or less in an evolutionary or revolutionary condition, it will be convenient to mention the following species simply as members of the higher assemblage. *Longipedia coronata*, Claus, is reported as taken by Brady 'abundantly on a sandy bottom off Seaton Carew (Durham), four fathoms; off Marsden, Sunderland, and Seaham, twenty to thirty fathoms';<sup>2</sup> *Ectinosoma spinipes*, Brady, with the preceding at various points, but not so abundant; *E. erythrope*, Brady, dredged in 5–30 fathoms off the coast of South Durham; *Zosime typica*, Boeck (the identity of which is somewhat doubted by Brady himself), off Hartlepool on sand in 25 fathoms; *Tachidius brevicornis* (O. F. Müller), in brackish marsh pools, Hylton Dene and Hartlepool; *Robertsonia tenuis* (Brady and Robertson), off Hawthorn on sand at 27 fathoms, and off Seaham amongst mud 10 fathoms deeper; *Amyxone spherica*, Claus, which in spite of its spherical surname has the 'body much compressed,' entered as taken 4 miles off Marsden among rough sand, is corrected in 1903 to *A. rubra*, Boeck,<sup>3</sup> and in the same year has its pre-occupied generic name altered to *Tegastes* by Norman;<sup>4</sup> *T. longimanus* (Claus), off Hawthorn in 27 fathoms depth, the creature itself a fiftieth of an inch in length; *Stenbelia hispida*, Brady, off Hartlepool in 5 and off Marsden in 30 fathoms; *S. ima*, Brady, in 10–35 fathoms off Marsden; *S. herdmanni*, A. Scott, from 'Laminaria roots at Holy Island';<sup>5</sup> *Ameira longipes*, Boeck, in 25–45 fathoms off Sunderland and Seaham; *Jonesiella spinulosa* (Brady and Robertson), which, it appears, must yield precedence to the earlier named *Danielssenia typica*, Boeck,<sup>6</sup> 'dredged off Hartlepool on a sandy bottom; and in a depth of thirty-seven fathoms sixteen miles off Hawthorn (Durham) on a muddy bottom'; *Delavalia reflexa*, Brady and Robertson, 5 miles off Hartlepool on sand; *D. robusta*, Brady and Robertson, in depths of 25–35 fathoms in several places off the coast of Durham; *Canthocampus minutus* (O. F. Müller), of which the generic name is commonly but wrongly given as *Canthocamptus*, and of which as a species Brady says that it prefers shallow pools in which vegetation is abundant, its colouring varying, 'with the character of the plants and infusoria on which it probably feeds,' adding, 'the only considerable pieces of water in which I have found it are the lake in Axwell Park near Gateshead, and Holy Island Lough (Northumberland); but both these are really, as to size and character of vegetation, big ponds rather than lakes'; *C. palustris*, Brady, a brackish-water species (N. in litt.); *Attheyella spinosa*, Brady, of which the first specimens 'were found in an old engine-pond at Murton Junction, near Sunderland'; *A. crassa*, Sars (N. in litt.); *A. pygmaea*, Sars (N. in litt.); *Laophonte similis*, Claus, 'between tide-marks at Sunderland'; *L. longicaudata*, Boeck, dredged off 'Hartlepool; Seaham, 20–30 fathoms; Hawthorn, 27 fathoms'; *L. lamellifera* (Claus), 'on Laminariæ and on muddy rocks near Sunderland'; *L. hispida* (Brady and Robertson), 4–10 fathoms off Durham coast; *Normanella dubia* (Brady and Robertson), 10–30 fathoms off Marsden and Hartlepool; *Cletodes limicola*, Brady, in 20–24 fathoms off coast of Durham; *C. longicaudatus*, Brady and Robertson, in 5 fathoms off Hartlepool; *C. propinquus*, Brady and Robertson, in 35 fathoms off Marsden; *Dactylopusia tisboides* (Claus), from 'Durham coast, amongst Laminariæ,' the older generic name *Dactylopus*

<sup>1</sup> *Les Coptopodes du Boulonnais*, p. 209 (1902).

<sup>2</sup> The references from this point are to the *Monograph of Brit. Copepoda*, vol. ii., Ray Soc. (1880).

<sup>3</sup> Brady, *Nat. Hist. Trans. Northumb. etc.*, new ser. i. 3.

<sup>4</sup> *Ann. Nat. Hist.*, ser. 7, xi. 368.

<sup>5</sup> Brady, *Nat. Hist. Trans. Northumb. etc.*, new ser. i. 3.

<sup>6</sup> Sars, *Cladocera, Copepoda, and Ostracoda of the Jana Expedition*, p. 20. St. Petersburg.



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being now discarded as pre-occupied ;<sup>1</sup> *D. tenuiremis* (Brady and Robertson), in 45 fathoms 20 miles off Sunderland, amongst muddy sand ; *D. flava* (Claus), in 27 fathoms off Hawthorn ; *D. brevicornis* (Claus), on *Laminaria* at Sunderland ; *Thalestris belgolandica*, Claus, in 27 fathoms off Durham coast ; *T. rufocincta*, Brady, 'off Marsden, 10 fathoms, Hawthorn, 27 fathoms' ; *T. clausii*, Norman, Durham coast, littoral among weeds, and from surface of open sea ; *T. longimana*, Claus, between tide-marks, 'Sunderland, Ryhope, etc.' ; *Westwoodia nobilis* (Baird), a brilliantly coloured species with a pre-occupied generic name, found by Brady rarely on *Laminariæ* near Sunderland ; *Arpacticus chelifer* (O. F. Müller), from many places on coast of Durham, and as to the young from roots of *Laminaria* Brady notes that specimens from Holy Island and tide-pools at North Sunderland were generally 'extremely melanotic' ;<sup>2</sup> *Pontopolites typicus*, T. Scott, from Holy Island ;<sup>3</sup> *Zaus spinatus*, Goodsir, coast of Durham, usually amongst *Laminaria saccharina* or other fuci ; *Alteutha depressa*, Baird, at Sunderland, chiefly from *Laminariæ*, the genus distinct from *Peltidium* ;<sup>4</sup> *A. interrupta* (Goodsir), in 10 fathoms off the Durham coast ; *Scutellidium tisboides*, Claus, at Roker, near Sunderland, on *Laminaria* ; and *S. fasciatum* (Boeck), plentiful on Durham coast wherever *Laminaria saccharina* grows.

Leaving at this point the Arpacticoida, we come to creatures of usually semi-parasitic habits, of which some have been already mentioned in the family Ascidicolidæ. *Cylindropsyllus lævis*, Brady, was dredged by Brady off Hartlepool in muddy sand at 5 fathoms ;<sup>5</sup> *Lichomolgus fucicola* (Brady), amongst fuci, near low-water mark, Ryhope, and 4 miles off Hawthorn and Marsden, amongst rough shelly sand, in about 25 fathoms ; *L. liber*, Brady and Robertson, from the last-mentioned localities, in 20-27 fathoms ; *L. arenicola*, Brady, off Seaton Carew, on sand in 4 fathoms ; *L. thorelli*, Brady and Robertson, off Marsden, in 25 fathoms, and off Hawthorn a little deeper ; *Cyclopicera nigripes*, Brady and Robertson, from the same localities as the last-named species ; *C. lata*, Brady, in tidal pool at Roker, near Sunderland ; *Artotrogus normani* (Brady and Robertson), 6 miles off Hawthorn, in 27 fathoms ; *Dyspontius striatus*, Thorell, at the last-named locality, where also was taken *Acontiphorus scutatus* (Brady and Robertson).

From the foregoing catalogue it will be understood how numerous are the species which the enlightened industry of a very few enthusiasts can add to the known fauna of a county. But for the three or four naturalists whose names have so frequently recurred, Durham might have passed as a district singularly eschewed by the wide-ranging Copepoda, instead of being conspicuously rich in representatives of their microscopic multitudes. Small as the free-living and semi-parasitic forms usually are, there is another set derived from them, the truly parasitic, which sometimes attain a considerable size, and of these it may be said that Surtees in his history tells us something, without either intending to do so or being conscious that he was doing it. He informs us that Bishop Cosin in 1662, having had to pay a bill of £5 17s. 1d. for five sturgeon, which were chiefly given away in presents, desired his steward at Howden 'to catch no more sturgeons.'<sup>6</sup> The episcopal right once fought for was evidently becoming a burden. But relying on this unwelcome abundance of sturgeons, one may without hesitation add to the Durham fauna the singular parasitic Copepod *Dichelestium sturionis*, Hermann, which frequents the gills of the great cartilaginous scale-armoured fish after which it is named. Similarly other fishes of the county, whether mentioned by Surtees or elsewhere, would in a general way justify the enumeration of their various ordinary parasites as belonging to the fauna of this region.

Among the Thyrostraca, commonly called cirripedes or barnacles, certain parasitic forms of a very interesting character were recorded from Durham waters by Norman in his dredging list for 1863, namely, *Peltogaster paguri*, Rathke, as 'very rare' ; *P. sulcatus*, Lilljeborg, 'rare' ; and *Clistosaccus paguri*, Lilljeborg, 'one specimen.'<sup>7</sup> All these are parasitic on hermit-crabs, the first and third according to Lilljeborg being found on *Eupagurus bernhardus* (Linn.),

<sup>1</sup> Norman, *Ann. Nat. Hist.*, ser. 7, xi. 368.

<sup>2</sup> *Nat. Hist. Trans. Northumb. etc.*, new ser. i. 4.

<sup>3</sup> Loc. cit., p. 4, pl. i. figs. 4-12.

<sup>4</sup> Brady in *Fifth Ann. Rep. of the Fishery Board for Scotland*, App. F, No. xi. p. 329.

<sup>5</sup> *Mon. Brit. Copepoda*, iii., Ray Soc. (1880).

<sup>6</sup> Surtees, *Hist. of Dur.* i. (2), 17.

<sup>7</sup> *Nat. Hist. Trans. Northumb. and Dur.* i. 26.



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though not confined to that species, while as hosts for the second he specifies the forms now known as *Eupagurus cuanensis* (Thompson) and *Anapagurus chiracanthus* (Lilljeborg).<sup>1</sup>

Several species of normal cirripedes are no doubt to be found in the district, such as *Balanus balanusides* (Linn.) ; *B. hameri* (Ascanius) ; *Coronula diadema* (Linn.) on the immigrant whale ; *Ferruca strömia* (O. F. Müller) ; *Trypetesa lampas* (Hancock), till recently known by the pre-occupied name *Alcippe*,<sup>2</sup> and *Conchoderma auritum* (Linn.), a common companion of *Coronula*. These and many more trophies of ardent investigation may be left for discovery or verification by some future chronicler.

<sup>1</sup> Lilljeborg in *Nova Acta Reg. Soc. Sci. Upsala*, ser. 3, iii. 27, 28 (Extr. 1859), and Supplement, pp. 11, 22 (Extr. 1860).

<sup>2</sup> Norman, *Ann. Nat. Hist.*, ser. 7, xi. 368.

# FISHES

Attempts have been made from time to time by the authors of the county and parochial histories to give accounts of the fishes, but the work of compiling the following list of Durham fishes has been rendered especially light by the excellent catalogue of the fishes of Northumberland and Durham published by the late R. Howse, M.A., curator of the Hancock Museum, Newcastle. I have, however, been able to add definitely to the list of our local fauna, species about which Mr. Howse was doubtful, and to add others which have come to our knowledge since his list was published (1890.)

It is rather curious that while not infrequent records of rare stragglers have been made for the coasts of Northumberland and Yorkshire, the majority of these have not visited, or if they have visited have not been recorded for Durham. Such it has been necessary therefore to exclude from the present list, but I have ventured to add species which from their well-known occurrence to the north and the south may be presumed to belong also to the Durham coast.

Fresh-water fishes are distinguished by an asterisk (\*), and those which occur in both fresh and salt water by two asterisks (\*\*).

## TELEOSTEANS

### ACANTHOPTERYGII

#### \*1. Perch. *Perca fluviatilis*, Linn.

In the Tees, Billingham Beck, in lakes and ponds, and in artificial ponds. 'Probably introduced into the district.'—Howse.

#### \*\*2. Bass. *Morone labrax*, Linn; *Labrax lupus*, Cuv.

Occasionally caught inshore and in the Tyne.

#### 3. Common Sea Bream. *Pagellus centrodontus*, Delaroche.

Rare; sometimes caught by trawlers.

#### 4. Black Sea Bream. *Cantharus lineatus*, Fleming.

Hartlepool.—Sir Cuthbert Sharpe, 1816. Also said by the late Mr. J. F. Spence to be landed at North Shields by trawlers occasionally. A recent local record is wanting.

#### 5. Gilthead. *Chrysophrys aurata*, Linn.

'Whitburn?';—Howse.

#### 6. Norway Haddock. *Sebastes norvegicus*, Cuv.

Rare.

#### 7. Maigre. *Sciaena aquila*, Lacép.

Rare; 'Jarrow Slake, on the Tyne, 1838, Rudd; Sunderland.'—Howse.

#### 8. Swordfish. *Xipbias gladius*, Linn.

'A specimen brought in by a trawler, North Shields, W. S. Corder.'—Howse.

#### 9. Red Mullet. *Mullus barbatus*, Linn.

Occasionally landed at North Shields from off the coast.

#### 10. Common or Ballan Wrass. *Labrus maculatus*, Bloch.

Locally, Sea Sow and Old Wife.

Not uncommon from rocky ground near the coast.

#### 11. Goldsinny Wrass. *Ctenolabrus rupestris*, Linn.

Specimens have been got at Cullercoats (J. Hancock) and at Redcar (Meynell).

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- \*12. Miller's Thumb. *Cottus gobio*, Linn.  
Locally, Bullhead.  
Common in the Tees and most streams.  
Mentioned by Brewster and by Surtees.
13. Father-lasher or Bull Head. *Cottus scorpius*, Linn.  
In rock pools and near the rocks ; common.
14. Grey Gurnard. *Trigla gurnardus*, Linn.  
Very common.
15. Red Gurnard. *Trigla cuculus*, Linn.  
Occasionally visits the coast. Mentioned by Fordyce, 1857.
16. Streaked Gurnard. *Trigla lineata*, Linn.  
'Occasionally taken on our coast.'—Howse.
17. Sapphirine Gurnard or Tub-fish. *Trigla hirundo*, Linn.  
An occasional visitor.
18. Pogge or Armed Bull-head. *Agonus cataphractus*, Linn.  
Common.
19. Lump Sucker or Paddlecock. *Cyclopterus lumpus*, Linn.  
Common.
20. Sea Snail. *Liparis vulgaris*, Flem.  
Rare.
21. Montagu's Sucker. *Liparis montagui*, Donovan.  
Common.
22. Spotted Goby. *Gobius minutus*, Gmel.
23. Two-Spotted Goby. *Gobius ruthensparri*, Euphras. ; *Gobius pusillus*, J. Lowe.  
Common in rock-pools.
24. Blackfish. *Centrolophus pompilus*, Linn.  
'One specimen from a Cullercoats fisherman, and another recorded from Redcar.'—Howse.
25. John Dory. *Zeus faber*, Linn.  
An occasional visitor.
26. Scad or Horse-mackerel. *Caranx trachurus*, Linn.  
'Frequently caught in the herring nets.—J. F. Spence.'—Howse.
27. Ray's Bream. *Brama raii*, Bloch.  
Occurs occasionally.
28. Opah or Kingfish. *Lampris luna*, Linn.  
Sometimes caught by trawlers and also rarely on the coast to the north and south.
29. Mackerel. *Scomber scombrus*, Linn.  
Locally, Bret.  
Migrates to the coast, July to September.  
Recorded by Surtees, 1823.
30. Tunny. *Orcynus thynnus*, Linn.  
'Frenchman's Bay in salmon nets—Mr. Clift, South Shields, August, 1885.'—Howse, who also records a shoal of small tunnies to the coast near Cullercoats in June, 1884.
31. Bonito. *Orcynus pelamys*, Linn.  
A straggler caught off Sunderland recorded by Professor G. S. Brady, 1870.
32. Greater Weever. *Trachinus draco*, Linn.
33. Lesser Weever or Stinger. *Trachinus vipera*, Cuv. and Val.  
More common than preceding.
34. Fishing Frog or Angler. *Lophius piscatorius*, Linn.  
Sometimes called 'Mermaid.' Common and frequently sold like the cat-fish as 'rock-turbot.'
35. Dragonet. *Callionymus lyra*, Linn.  
Locally, Gowdie.  
Common.
36. Wolf or Cat-fish. *Anarrhichas lupus*, Linn.  
Common, sold as 'rock-turbot.'
37. Gattorugine or Tompot. *Blennius gattorugine*, Bloch.  
Mentioned in the list of Hartlepool fishes by Sir Cuthbert Sharpe.
38. Shanny. *Blennius pholis*, Linn.  
Common in the rock-pools.
39. Yarrell's Blenny. *Carelophus ascanii*, Walb.  
Rare.
40. Gunnel or Butter-fish. *Centronotus gunnellus*, Linn.  
Common between tide marks.
41. Viviparous Blenny. *Zoarces viviparus*, Linn.  
Common between tide marks.
42. Sharp-tailed Lumpenus. *Lumpenus lampetiformis*, Walb.  
An example was got at Cullercoats in February, 1903 ; but it is more than likely generally, if rarely, distributed in the district.



## FISHES

### ANACANTHINI

43. Cod. *Gadus morrhua*, Linn.  
The young are called codling.
44. Haddock. *Gadus æglefinus*, Linn.
45. Bib or Pout. *Gadus luscus*, Linn.  
Locally, Brassie and Scotch Haddock.  
Fairly common.
46. Poor Cod. *Gadus minutus*, Linn.  
Not uncommon.
47. Coal-fish, Saithe, or Black Jack. *Gadus virens*, Linn.  
The successive stages of growth are named hallins, poddlers or billet, half-waxers, coal-saithe and black jack.
48. Whiting. *Gadus merlangus*, Linn.
49. Pollack or Lythe. *Gadus pollachius*, Linn.
50. Hake. *Merluccius vulgaris*, Cuv.
- \*51. Burbot or Eelpout. *Lota vulgaris*, Cuv.  
Surtees recorded this species as occurring in the Skerne.
52. Ling. *Molva vulgaris*, Flem.
53. Five-bearded Rockling. *Motella mustela*, Linn.
54. Four-bearded Rockling. *Motella cimbria*, Linn.  
Common about 3 to 6 miles or more off the coast.
55. Three-bearded Rockling. *Motella tricirrata*, Bloch.  
Rare.
56. Lesser Fork-beard. *Raniceps raninus*, Linn.  
Rare.
57. Torsk or Tusk. *Brosmius brosme*, Muller.  
Rare.
58. Halibut. *Hippoglossus vulgaris*, Flem.  
Still frequently called 'Turbot.'
59. Long Rough Dab. *Hippoglossus limandoides*, Bloch.
60. Turbot. *Rhombus maximus*, Linn.  
Locally, Brat.
61. Brill. *Rhombus lævis*, Linn.  
Not common.

62. Common Topknot. *Zeugopterus punctatus*, Bloch.

Rare; usually caught in crab-pots. It is more than likely this species some of the fishermen call 'hard-ground soles.'

63. Megrim. *Lepidorhombus megastoma*, Donovan.  
Rare.

64. Plaice. *Pleuronectes platessa*, Linn.

65. Pole Dab or Witch. *Pleuronectes cynoglossus*, Linn.

66. Lemon Dab. *Pleuronectes microcephalus*, Donovan.

Commonly called 'Lemon Sole.'

67. Dab. *Pleuronectes limanda*, Linn.

- \*\*68. Flounder. *Pleuronectes flesus*, Linn.

69. Sole. *Solea vulgaris*, Quensel.  
Small examples are called 'slips.'

### PLECTOGNATHI

70. Short Sun-fish. *Orthogoriscus mola*, Linn.  
An occasional straggler reaches the coast.

### PERCESOCES

- \*\*71. Grey Mullet. *Mugil capito*, Cuv.  
'In the Tyne.—J. Hancock.'—Howse.
- \*\*72. Lesser Grey Mullet. *Mugil chelo*, Cuv.  
Said to visit the coast in the autumn.
73. Larger Launce or Sand-Eel. *Ammodytes lanceolatus*, Le Sauv.
74. Lesser Launce or Sand-Eel. *Ammodytes tobianus*, Linn.  
More common than the preceding.
75. Garfish. *Belone vulgaris*, Flem.  
'Taken in the autumn by men and boys fishing with rod and line from the rocks in Frenchman's Bay, on the Durham coast.'—Howse. Also caught at the mouth of the Tees in the autumn.
76. Saury Pike or Skipper. *Scombresox saurus*, Walb.  
Rare.

### HEMIBRANCHII

- \*\*77. Three-spined Stickleback. *Gastrosteus aculeatus*, Linn.

Common at the seaside in some places, in brackish water, and in fresh water ponds, lakes, streams and ditches. The sea speci-

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mens are usually 'mailed' or 'rough-tailed,' and the fresh-water examples are 'smooth-tailed.'

- \*78. Ten-spined Stickleback. *Gastrosteus pungitius*, Linn.

Recorded in Sir Cuthbert Sharpe's History of Hartlepool. Occurs in a pond at Picton, near Stockton.

79. Fifteen-spined Stickleback. *Gastrosteus spinachia*, Linn.

## LOPHOBRANCHII

80. Greater Pipe-fish. *Syngnathus acus*, Linn.

81. Snake Pipe-fish. *Nerophis æquoreus*, Linn.  
Not so common as the preceding.

## HAPLOMI

- \*82. Pike. *Esox lucius*, Linn.

Wynyard Park, and other ponds, Tyne, Tees, Billingham Beck, Skerne. Small examples are called 'Jack.'

## OSTARIOPHYSI

- \*83. Carp. *Cyprinus carpio*, Linn.

Introduced into Wynyard Park and other ponds. 'In becks near Stockton, escaped from Wynyard ponds.—J. Hogg.'—Howse.

- \*84. Gudgeon. *Gobio fluviatilis*, Flem.

Common in the Tees and its tributaries, the Derwent, and other streams. Mentioned by Surtees.

- \*85. Rudd. *Leuciscus erythrophthalmus*, Linn.

'Introduced into ponds . . . formerly in ponds near Marsden.'—Howse.

- \*86. Roach. *Leuciscus rutilus*, Linn.

In the Tyne and the Tees. Recorded by Surtees.

- \*87. Chub or Skelly. *Leuciscus cephalus*, Linn.

In the Tyne and the Tees. Recorded by Surtees.

- \*88. Dace. *Leuciscus dobula*, Linn. (*L. vulgaris*, Yarrell, Day, &c.).

Common in rivers. 'Recorded by Wallis, Surtees, and J. Hogg.'—Howse.

- \*89. Minnow. *Leuciscus phoxinus*, Linn.

Common in rivers and streams.

- \*90. Tench. *Tinca vulgaris*, Cuv.

Introduced into Wynyard Park and Raby Park ponds.

- \*91. Bleak. *Alburnus lucidus*, Heck. & Kner.

Recorded by Clarke and Roebuck as common in the lower waters of the Tees.

- \*92. Loach. *Nemachilus barbatulus*, Linn.

Common in small streams.

## MALACOPTERYGII

93. Argentine. *Maurolicus borealis*, Nilsson.

'In former years (1859-60) I frequently found this little fish washed up on the shore at high-tide mark on South Shields sands and in Marsden Bay during winter.'—Howse.

- \*\*94. Salmon. *Salmo salar*, Linn.

In the Tyne, the Tees, and more rarely in the Wear. Caught also near the coast with drift-nets.

- \*\*95. Trout. *Salmo trutta*, Linn.

The Brown Trout is common in rivers and streams. The Sea Trout and the Bull Trout ascend the Tyne, the Wear, and the Tees, and are caught also in drift-nets near the coast. The Bull Trout and the Sea Trout are more common in the Wear than in the Tyne or the Tees. Loch Leven Trout were introduced into the Tees ten years ago and are still caught.

96. American Brook Trout. *Salmo fontinalis*, Mitchill.

Introduced into the Tees.

- \*97. Grayling. *Thymallus vexillifer*, Linn.

Rare. In the Tyne and the Tees. Introduced into the Tees in 1839 by J. C. Chaytor. 'Introduced into the Derwent about six years ago.—Rev. W. Featherstonhaugh, May, 1890.'—Howse.

- \*98. Smelt or Sparling. *Osmerus eperlanus*, Linn.

In the Tyne and the Tees. Recorded by Wallis and by Surtees.

99. Herring. *Clupea harengus*, Linn.

100. Pilchard or Sardine. *Clupea pilchardus*, Linn.

An occasional visitor. Mentioned by For-dyce.

101. Sprat. *Clupea sprattus*, Linn.

Occurs with young herrings in the summer, and in 1902 both were present in extraordinary abundance all along the coast.

## FISHES

- \*\*102. Shad. *Clupea alosa*, Linn.  
Rare.

### APODES

- \*\*103. Eel. *Anguilla vulgaris*, Turt.  
Common on the coast and in rivers and

streams and ponds. The elvers ascend the rivers in vast numbers in early summer.

104. Conger Eel. *Conger vulgaris*, Cuv.

Common. The larva, *Leptocephalus morrisii*, was obtained at Whitburn by W. Hutchinson, and recorded by R. Howse.

## GANOIDS

- \*\*105. Sturgeon. *Acipenser sturio*, Linn.  
Landed by trawlers occasionally. Sometimes caught in the 'Tees. 'A specimen weighing

141 lb. was caught at Scotswood on the Tyne in 1894.—Howse.' Mentioned by Surtees and by recent writers.

## CHONDROPTERYGIANS

106. Rough Hound or Small-spotted Dogfish.  
*Scyllium canicula*, Linn.

Sometimes caught by trawlers off the coast.

107. Porbeagle. *Lamna cornubica*, Gmel.  
Frequently recorded.

108. Thrasher. *Alopias vulpes*, Gmel.  
An occasional visitor.

109. Smooth Hound. *Mustelus lævis*, Flem.;  
(*M. vulgaris*, Day.)

It has not been recorded for the Durham coast, but it occurs to the north and the south, and has therefore likely been overlooked.

110. Tope. *Galeus vulgaris*, Flem.  
'Whitburn.'—R. Howse. Occasionally landed at North Shields by trawlers and liners from the nearer fishing grounds.

111. Picked Dogfish. *Acanthias vulgaris*, Risso.  
Common.

112. Greenland Shark. *Læmargus microcephalus*, Bl. Schn.

'Off Sunderland and the Tyne.'—R. Howse. Occasionally caught by trawlers.

113. Spinous Shark. *Echinorhinus spinosus*, Blainville.

Taken off the mouth of the Tyne in 1869 and in 1876.—J. Wright.

114. Monk-fish or Angel-fish. *Rhina squatina*, Linn.

'Occasionally brought in by the trawlers

and fishermen—sometimes three feet in length.'—R. Howse. This is still the case.

115. Torpedo or Electric Ray. *Torpedo nobiliana*, Bonop.

A large example caught in a trawl net off Sunderland, June 18, 1896, and preserved in the Hancock Museum.

116. True Skate. *Raia batis*, Linn.  
Common.

117. Sharp-nosed Skate or White Skate. *Raia alba*, Lacép.  
Common.

118. Long-nosed Skate. *Raia oxyrhynchus*, Linn; *R. fullonica*, Yarrell.  
Fairly common.

119. Homelyn or Spotted Ray. *Raia maculata*, Montagu.  
Not common.

120. Cuckoo Ray. *Raia circularis*, Couch.  
Not common.

121. Thornback. *Raia clavata*, Linn.  
Common

122. Starry Ray. *Raia radiata*, Donovan.  
*Locally*, Jenny Hanover.  
Very common.

123. Sting Ray. *Trygon pastinaca*, Linn.  
A rare straggler.

124. Eagle Ray. *Myliobatis aquila*, Linn.  
'A small specimen was taken at Cullercoats, 1875.'—R. Howse.



# A HISTORY OF DURHAM

## CYCLOSTOMES

- |   |  |
|---|--|
| <p>**125. Sea Lamprey. <i>Petromyzon marinus</i>, Linn.<br/>Not common.</p> <p>*126. River Lamprey. <i>Petromyzon fluviatilis</i>, Linn.<br/>In the rivers and streams.</p> | <p>*127. Mud Lamprey or Pride. <i>Petromyzon branchialis</i>, Linn.<br/>In streams. Recorded by Surtees for the Skerne.</p> <p>128. Hag. <i>Myxine glutinosa</i>, Linn.<br/>Locally, Sucker.<br/>Abundant.</p> |
|---|--|

# REPTILES AND BATRACHIANS

Little more than a list can be given of the reptiles and the batrachians of the county of Durham, as attention appears only to have been paid to them in a very general way. All the common species are known in the county with the exception of the grass snake (*Tropidonotus natrix*); but there is no record of the natterjack toad (*Bufo calamita*), and the remaining rarer British species are hardly likely to occur.

## REPTILES

### LACERTILIA

1. Common Lizard. *Lacerta vivipara*, Jacq.  
Bell—*Zootoca vivipara*.

Often to be seen in dry places and about old walls, and probably abundant in most parts of the county.

2. Slow-worm or Blind-worm. *Anguis fragilis*, Linn.  
Common; often seen on roads.

### OPHIDIA

3. Ringed Snake or Grass Snake. *Tropidonotus natrix*, Linn.  
Bell—*Natrix torquata*.

It seems doubtful whether the grass snake has a real place in the fauna of the county. It has undoubtedly occurred as an 'escape'; an instance of this at Sunderland was recorded by

the late Richard Howse (quoted in Leighton's *British Serpents*), but Howse did not believe the species ever occurred naturally. It has been described in certain newspaper articles as frequent, but no confirmation has ever been forthcoming. If the grass snake is an inhabitant of the county at all it is undoubtedly very scarce and by no means generally distributed.

4. Common Viper or Adder. *Vipera berus*, Linn.

Bell—*Pelias berus*.

Common, especially about dry, scrubby woods and the borders of moorlands. Full-sized local examples are in the Newcastle Museum. Colour variations are met with here as elsewhere, and Howse states (*loc. cit.*) that individuals of the extreme types known as the black and the red adder have been taken.

## BATRACHIANS

The following appear to be as common here in suitable situations as they are in other parts of England.

2. Common Toad. *Bufo vulgaris*, Laur.

### CAUDATA

1. Common Frog. *Rana temporaria*, Linn.
3. Crested Newt. *Molge cristata*, Laur.
4. Common Newt. *Molge vulgaris*, Linn.

## BIRDS

The county of Durham is not naturally, and still less in its present economical conditions, favourably adapted for either abundance or variety of bird life, except in certain districts.

Roughly speaking, the county may be compared to a wedge, an isosceles triangle, driven in between Northumberland and Yorkshire, having its base at the sea and its apex among the hills of the Pennine Chain, the Tyne forming its northern boundary from the coast for over twenty miles, and then generally the Derwent; and the Tees, from its source to its mouth, bounding it on the south. The Wear, for its whole length, divides it into two unequal parts. These and their tributaries are its only rivers. From the Tyne to the watershed of the Tees Valley extend the coal-measures, covering two-thirds of the county, the western portion of the apex being mountain limestone or millstone grit, while the new red sandstone forms a strip along the lower part of the Tees Valley. The coast line affords little encouragement, and no protection, for sea birds. While Northumberland has its islands, Holy Isle, the Farnes, and Coquet, some of them with magnificent cliffs, as breeding resorts, and Yorkshire its bold headlands from Whitby to Flamborough Head, the Durham beach from the Tyne to Hartlepool is slightly elevated from 50 to 100 ft., frequently broken by the narrow openings of little glens, or 'denes' as they are locally termed. From Hartlepool to Teesmouth there is simply a succession of sand dunes. The Tyne and the Wear cannot be said to have any estuaries, and their banks are fringed by manufactories and docks down to the sea shore. The Tees has an estuary which has provided us with most of our water-fowl, but the river itself is now lined with ironworks and docks until it reaches the sea.

Thus there is no shelter and little inducement for the passing sea-fowl to halt on our coasts. The little dells which open to the sea between Wearmouth and Hartlepool, some of which (as Castle Eden Dene) preserve remains of the primeval forest, afford refuge to many smaller birds, and a resting place to some few passing immigrants.

When we leave the coast, the collieries and coke ovens which stud two-thirds of the county, destroying by their fumes trees and hedgerows, and bringing a vast population, have in many places driven away all the winged inhabitants save the house-sparrow. Happily there are not a few parks and sheltered river banks, shielded from the fumes, well stocked with the smaller passerines. The steep and often precipitous well-wooded banks of the Wear, even in the centre of the colliery districts, the sheltered trees escaping the effects of the smoke, are the resort of many



## A HISTORY OF DURHAM

of our common species. In spite of relentless persecution the kingfisher may still be found, though in diminishing numbers, all along the course of the Wear, the Tees, and the Browney; and I know of one secluded spot, close to the river Wear, where the wild duck still breeds. It is needless to say that outside the parks and preserved plantations there is but little game in the central portion of the county; while the mistaken zeal of the gamekeeper has wellnigh exterminated every raptorial bird, even the beautiful and harmless kestrel being but rarely seen. The lapwing, in my younger days most abundant, is now very scarce in the breeding season in the east of the county. From these remarks the lower Tees Valley, still agricultural and free from collieries, must be excepted.

But when we pass from the coal-measures, to the west of Bishop Auckland and Barnard Castle, we are in a region which may well rejoice the ornithologist's heart. As we get on the mountain limestone the features of the country are entirely changed. There is little arable culture, meadow land predominates, till we rise to the grand expanse of moorland, stretching to the watershed when we touch Cumberland. Here and there are scraps of primeval forest. We have evidence that prior to the denudation of the forests in the Roman times, for the working of the lead mines, the district was well wooded, chiefly with the Scotch fir, of which the stumps are found in the peat. Many streamlets run down tiny dells fringed with stunted oak, rowan, and other trees. The dipper or water-ousel may often be seen dipping and perching on a stone even on the smallest brooklet. The ring-ousel remains on the moors from early spring to late autumn, and fully appreciates the bird-cherry and the rowan berry. A careful observer, as he strolls by the bed of the upper Wear, may detect the pied flycatcher and perhaps the hawfinch. When he ascends on to the moors he is greeted by the shrill cry of the whaup (curlew) overhead, the wheatear jerks its tail as it drops among the stones of a crumbling dyke, the ring-ousel skims from a whin (furze) bush or perhaps at the foot of a neighbouring cliff; and if it be before the dreaded 12th of August the grouse springs from almost under his feet and startles him with its whirring flight. A few years ago the merlin might often be seen skimming over the heather; now, alas, these beautiful little falcons are rarely seen, thanks to the ignorant zeal of game preservers and their keepers. The peewit and, on Kilhope Fell, the golden plover are plentiful, and occasionally a heron from Raby lazily flaps its wings as it soars up from some pool in a mountain burn. The true dotterel is said to have bred on the heights, but I can find no proof of this, and the nearest breeding locality I know of is Crossfell in Cumberland, where fifty years ago I took a nest of three eggs. In one part of the upper Wear valley there has been extensive planting of conifera within the last forty years, and in these woods the crossbill has bred, and I believe does so still. One valuable game bird, the blackcock, has very much diminished of late years, owing probably to the reckless shooting of the hen birds by yearly game tenants, whose

## BIRDS

only idea is to swell their bags, and who are perhaps not aware that the blackcock is polygamous. The drainage of the marshy bottoms, with their clumps of marsh myrtle in which these birds delight, has also contributed to their threatened extinction.

Excluding these few species, the avifauna of West Durham is not far different from what it was in past centuries except—but it is a very great exception—the raptorial birds. Of these the peregrine falcon, the kite, the buzzard, the marsh and hen harriers have vanished within living memory. Of the golden eagle as a resident we find no trace, though the name of Eaglescliffe, a village on the rocky bank of the Tees, may attest its former existence. It very rarely passes over the county. On one occasion, some thirty years ago, in the month of November, I was crossing on foot from Teesdale to Nenthead above the source of the Wear. In passing over Kilhope Fell a dense fog came on. The course, for there is scarcely a road, is marked by tall posts at intervals for the benefit of travellers during the winter snows. At the foot of one of them I sat down till the mist should lift, for I could not see a yard in front of me. Suddenly it lifted, I looked up, and to my amazement a golden eagle in young plumage with its white tail was perching on the top of the pole. I know not which of us was most astonished at the mutual recognition—it was off in a moment. A day or two after I read in a local paper that a golden eagle had been seen near Redcar, and soon afterwards, alas, that one had been shot in the East Riding.

The exhaustion of the lead mines, for centuries the chief industry of West Durham, and the consequent diminution of the population, seem likely to promote the increase of all the feathered tribe, except the birds of prey, in our moorlands.

What the ornithological fauna of the coast once was may be gathered from the following extract from the Cott. MS. (Grove's *Hist. of Cleveland*, p. 399) about the date 1670.

‘Neere unto Dobham the Porte of the mouth of the Teese,’ (now known as Cargo Fleet, and covered with iron and cement works) ‘the shore lyes flatt, where a shelf of sand, raised above the highe water marke, entertaines an infynite number of sea-fowle, which lay theyr Egges heere and there, scatteringlie in such sorte, that in Tyme of Breedinge, one can hardly sett his foote so warylye, that he spoyle not many of theyr nests.’

The number of species which may be enumerated as of the county of Durham, in accordance with the custom which includes every bird which has ever occurred in a state of nature within its limits, is 249. Of these the number of species permanently resident or breeding is 105. Regular winter visitors, 33. Irregular but frequent visitors, 39. Merely accidental visitors, 72. The following are extinct as breeding species within our limits, though some of them still occur occasionally:—Nuthatch, raven, marsh-harrier, hen-harrier, Montagu's harrier, kite, buzzard, peregrine falcon, bittern, sheldrake, pintail duck, pochard, dotterel, ruff, black-headed gull, lesser black-backed gull.



# A HISTORY OF DURHAM

## SYSTEMATIC LIST OF SPECIES

1. White's Thrush. *Turdus varius*, Pallas.  
A specimen, the eighth recorded in Britain, was taken 31 January, 1872, in Castle Eden Dene, having been shot and wounded a fortnight before, by Mr. Rowland Burdon. It lived three weeks after its capture. Mr. Burdon gave it to me. On examination the furculum was found to have been long since fractured, but to have coalesced, though very clumsily.
2. Missel-Thrush. *Turdus viscivorus*, Linn.  
Resident, but not numerous, in suitable localities. Had largely increased within the last sixty years, but has latterly diminished, probably from the increase of human population.
3. Song-Thrush. *Turdus musicus*, Linn.  
Abundant except in winter, when most migrate. A few remain, even in the severest seasons, but they will not venture to come to the window sills for food until several days after the blackbirds have set them the example. I have observed that in a hard frost while numbers of redwings perish, the song-thrush survives.
4. Redwing. *Turdus iliacus*, Linn.  
A regular winter visitor. In mild seasons it generally disappears till the beginning of spring, while in severe winters many remain only to succumb to a long frost.
5. Fieldfare. *Turdus pilaris*, Linn.  
A winter migrant, arriving generally in large flocks about the end of October. If there be a continuance of severe frost they disappear as soon as they have stripped the rowan and holly berries, halting again for a few days on their return north in spring.
6. Blackbird. *Turdus merula*, Linn.  
Very abundant. Remains through the severest weather.
7. Ring-Ousel. *Turdus torquatus*, Linn.  
A regular summer resident, arriving in April and remaining till October in the moorlands of the west of the county. It is by no means gregarious during its stay.
8. Wheatear. *Saxicola ænanthe* (Linn.).  
Abundant in the 'wild west' of the county; a few in other parts arrive at the beginning of April. It affects the dry stone dykes of Wear-dale and Teesdale, where it nests.
9. Whinchat. *Pratincola rubetra* (Linn.).  
*Locally, Haychat.*  
A summer resident, not uncommon even in populous districts. Arrives towards the end of April and leaves in October.
10. Stonechat. *Pratincola rubicola* (Linn.).  
A resident in small numbers and generally distributed, especially about fox coverts. It builds almost always in whin (furze) bushes, and should really be called whinchat, rather than its congener.
11. Redstart. *Ruticilla phænicurus* (Linn.).  
A regular spring and summer resident, arriving about the middle of April, but by no means numerous. A few years ago, a pair bred in an ivy-clad tree close to a public walk in the 'Banks' in the city of Durham.
12. Black Redstart. *Ruticilla titys* (Scopoli).  
A rare occasional visitor. But while in the south of England it is looked upon rather as a winter visitor, here it has only been noticed from spring to autumn. In the year 1845 a pair built their nest on a cherry tree trained on a wall in the garden of the Rev. Dr. Raine, at Crook Hall, in the suburbs of Durham city. I regret to say the birds were shot. The male is in Durham Museum; the nest and an egg were given to the late John Hancock.
13. Red-spotted Bluethroat. *Cyanecula suecica* (Linn.).  
One obtained by H. G. Stobart, Esq., at Wolsingham, 26 September, 1893. Another at Chester-le-Street about the same date, and another two or three years ago.
14. Redbreast, or Robin. *Erithacus rubecula* (Linn.).  
Universal.
15. Whitethroat. *Sylvia cinerea*. (Bechstein).  
An abundant summer visitor everywhere.
16. Lesser Whitethroat. *Sylvia curruca* (Linn.).  
A summer visitor, breeding in several parts of the county, but extremely scarce and local. Mr. Hancock mentions a nest taken close to Newcastle but in the county of Durham.
17. Blackcap. *Sylvia atricapilla* (Linn.).  
Very common from early spring to late autumn. Occasionally met with as late as December.
18. Garden-Warbler. *Sylvia hortensis* (Bechstein).  
Not so common as the last, arriving later.
19. Goldcrest. *Regulus cristatus*, K. L. Koch.  
A resident, and abundant in all our fir plantations. Its numbers are largely reinforced towards the end of autumn.



## BIRDS

20. Firecrest. *Regulus ignicapillus* (Brehm).

A rare and accidental visitor. I possess a specimen shot at Brancepeth by Mr. Dale, keeper to Lord Boyne, in April, 1852.

21. Chiffchaff. *Phylloscopus rufus* (Bechstein).

Our first spring arrival, and abundant wherever there are old trees, and in pleasure grounds.

22. Willow-Warbler, or Willow-Wren. *Phylloscopus trochilus* (Linn.).

The most abundant of all our summer visitors, arriving early in April.

23. Wood-Warbler, or Wood-Wren. *Phylloscopus sibilatrix* (Bechstein).

Arrives about the beginning of May. Is plentiful in wooded districts only.

24. Reed-Warbler. *Acrocephalus streperus* (Vieillot).

The only known instance of its occurrence is a nest of four eggs taken by Mr. T. Thompson, of Winlaton, nearly forty years ago, between Blaydon and Derwenthough. The nest has been carefully preserved, and is unmistakable. (*N. H. Trans. Northumb. and Dur.* xiv. 119.)

25. Great Reed-Warbler. *Acrocephalus turdoides* (Meyer).

The first specimen of this species known to have been taken in Britain was shot at Swalwell on the Tyne on 28 May, 1847 (*Ann. and Mag.* xx. p. 135). It has not since occurred in the district.

26. Sedge-Warbler. *Acrocephalus phragmitis* (Bechstein).

An abundant summer visitor. A few years ago a pair bred in the dwarf willows on the banks of the Wear in the city of Durham, close to the public walk.

27. Grasshopper-Warbler. *Locustella naevia* (Boddaert).

A regular summer visitor to certain localities, especially the banks of the Tyne and the Derwent. I once had three nests with their unmistakable eggs brought to me from near Gateshead.

28. Hedge-Sparrow. *Accentor modularis*, Linn.

Common except on the moors.

29. Dipper or Water Ousel. *Cinclus aquaticus* (Bechstein).

Resident on all the burns and rocky streams in the west and occasionally by the streams near the coast. Much persecuted through the ignorance of anglers.

30. British Long-tailed Tit. *Acredula rosea* (Blyth).

Generally distributed throughout the county, but not very numerous. The whiteheaded continental form *A. caudata* (Linn.), though more than once taken on the north bank of the Tyne, has not yet been recorded within our limits.

31. Great Tit. *Parus major*, Linn.

Abundant everywhere. Resident throughout the year.

32. Coal-Tit. *Parus ater*, Linn.

Common, but by no means as numerous as the preceding species.

33. Marsh-Tit. *Parus palustris*, Linn.

Plentiful, and I think more numerous in this county than the coal-tit, but more shy, resorting generally to 'woods and scrub.' While the three other species come regularly to a window sill to be fed, it is only after a long continued frost that the marsh-tit ventures to approach.

34. Blue Tit. *Parus cæruleus*, Linn.

Quite as numerous as the great tit. Resident.

35. Nuthatch. *Sitta cæsia*, Wolf.

Now only an accidental straggler. A century ago it appears to have been well known in suitable localities in the county. Sixty years ago it used to breed in Auckland Castle Park, but for the last fifty years the only record I can find of its occurrence is one shot at Wolsingham in 1873, and another at Elton about ten years ago.

36. Wren. *Troglodytes parvulus*, Koch.

Resident. Common everywhere.

37. Tree-Creeper. *Certhia familiaris*, Linn.

A permanent resident wherever there are woods, and especially old trees.

38. Pied Wagtail. *Motacilla lugubris*, Temminck.

Common. A few remain through the winter, but the majority go south.

39. White Wagtail. *Motacilla alba*, Linn.

This, the continental form of the preceding, is an accidental visitor. One was brought to me in the spring of 1904. Noticed in the 'Banks' at Durham by Mr. Cullingford the same year.

40. Grey Wagtail. *Motacilla melanope*, Pallas.

Generally distributed in summer. A few remain through the winter.

# A HISTORY OF DURHAM

41. Blue-headed Wagtail. *Motacilla flava*, Linn.

An irregular spring and summer visitor. Has bred several times between the Tyne and the Derwent.

42. Yellow Wagtail. *Motacilla raii* (Bonaparte).

A regular summer visitor arriving early in April, and leaving in September.

43. Tree-Pipit. *Anthus trivialis* (Linn.).

A summer visitor. Abundant. Arrives in the middle of April.

44. Meadow-Pipit. *Anthus pratensis* (Linn.).

A resident species, abundant in the west, but found wherever there is open ground.

45. Rock-Pipit. *Anthus obscurus* (Latham).

Frequently obtained on our coast. I am not aware of its breeding here, though it does on the coasts of Northumberland and Yorkshire.

46. Golden Oriole. *Oriolus galbula*, Linn.

A female was taken at Hebburn in 1831, now in Newcastle Museum.

47. Great Grey Shrike. *Lanius excubitor*, Linn.

A winter seldom passes without one or more captures being reported. A few years ago one remained for several days about the shrubberies and gardens near Durham city. The bird with only one bar on the wing, known as *Lanius major* (Pallas) has frequently occurred.

48. Red-backed Shrike. *Lancus collurio*, Linn.

A rare accidental visitor.

49. Waxwing. *Ampelis garrulus*, Linn.

An irregular winter visitor. When it does arrive, it is generally in considerable numbers. In 1849 and 1866 it was very numerous in South Durham. Though not in flocks, I noticed daily, walking in different directions, three or four perched on trees by the highway. Another flight was in 1876, and a few in 1871.

50. Pied Flycatcher. *Muscicapa atricapilla*, Linn.

A summer visitor, not so rare as is generally supposed. It breeds regularly in several parts of the county. One year a pair inhabited the 'Banks,' a public wooded walk by the river side, in the city of Durham, for nearly a month. They were undoubtedly breeding when they were shot by a miscreant. In

1866 several pairs bred near Barnard Castle, and in 1901, many pairs about Wolsingham and Stanhope.

51. Spotted Flycatcher. *Muscicapa grisola*, Linn.

A most abundant summer visitor. Found anywhere from the end of April.

52. Swallow. *Hirundo rustica*, Linn.

Nothing can be more distressing to the lover of nature, than the rapid diminution of the swallow tribe within the last ten years. Where there used to be fifty skimming about, there are now but two or three. This year there is scarcely a swallow to be seen in the neighbourhood of the city of Durham. I am at a loss to account for the disappearance, for it is not from persecution on the spot, and the reduction has been gradual. Perhaps it is due to the awful slaughter of the returning migrants on the south coast of France.

53. House-Martin. *Chelidon urbica* (Linn.).

Arrives generally a day or two later than the swallow. Formerly most abundant, but of late years becoming fewer and fewer, till now in the eastern and central parts of the county it is almost extinct. Ten years ago it nested in numbers about the Cathedral windows, and on many houses in and about the city of Durham. This year there is not one. The destructive instincts of urban housemaids, but chiefly the seizure of its nests by that avian rat, the house-sparrow, may partly, but only partly, account for the change.

54. Sand-Martin. *Cotile riparia* (Linn.).

Generally arrives a few days before its congeners. It seems to have maintained its numbers fairly, wherever there are suitable banks for nesting.

55. Greenfinch. *Ligurinus chloris* (Linn.).

A common resident. Often seen in flocks during the winter.

56. Hawfinch. *Coccothraustes vulgaris*, Pallas.

Formerly a rare casual visitor, but of late years steadily increasing, and that in all parts of the county. In 1902 I knew of nests in a garden near Durham, also in the most secluded part of Upper Weardale, and in other places too numerous to mention.

57. Goldfinch. *Carduelis elegans*, Stephens.

An occasional visitor, generally in autumn. I have been unable to find any proof of its having bred in the county, though it is said to have done so near the Tees.

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58. Siskin. *Carduelis spinus* (Linn.).

A regular winter visitor ; sometimes, but rarely, remaining to breed. The nest and eggs have been taken several times ; the first recorded was at Brancepeth, 5 May, 1848. I had a nest and four eggs from Weardale in 1874.

59. House-Sparrow. *Passer domesticus* (Linn.)

Everywhere, except on the moors, an increasing nuisance.

60. Tree-Sparrow. *Passer montanus* (Linn.).

A constant resident in a few localities, where it especially affects old trees. Always to be found among the trees on the 'Banks' of Durham city.

61. Chaffinch. *Fringilla cœlebs*, Linn.

Common and universal. The females, and apparently some of the males, leave us in winter.

62. Brambling. *Fringilla montifringilla*, Linn.

A regular winter visitor, but in very varying numbers ; in some seasons large flocks are met with.

63. Linnet. *Linota cannabina* (Linn.).

A common resident.

64. Meally Redpoll. *Linota linaria* (Linn.).

A frequent winter visitor.

65. Greenland Redpoll. *Linota hornemanni*. Holboell.

The only recorded example from the British Isles was taken on Whitburn sea banks on 24 April, 1855. It had been noticed flying about there for some days. It is now in the Hancock Museum, Newcastle-on-Tyne.

66. Lesser Redpoll. *Linota rufescens* (Vieillot).

Not very plentiful except at the seasons of migration, but many are resident, and breed in young plantations and thickets.

67. Twite. *Linota flavirostris* (Linn.).

A resident on all our moors, where it breeds.

68. Bullfinch. *Pyrrhula europæa*, Vieillot.

A constant resident, but not very abundant.

69. Crossbill. *Loxia curvirostra*, Linn.

A constant resident in woods and fir plantations in Weardale. It breeds as early as February. It was first noticed as a nesting bird in the county in 1838, but since then has certainly increased.

70. Corn-Bunting. *Emberiza miliaria*, Linn.

Common and resident.

71. Yellow Hammer. *Emberiza citrinella*, Linn.

Common and resident. Decreased much in numbers of late years.

72. Little Bunting. *Emberiza pusilla*, Pallas.

The second recorded occurrence of this Siberian wanderer in Britain was a male bird taken at Bishop Auckland, 11 October, 1902 (*Zoologist*, 1902, p. 466).

73. Reed - Bunting. *Emberiza schœniclus*, Linn.

Resident. Not uncommon by streams and in marshes.

74. Snow - Bunting. *Plectrophanes nivalis* (Linn.).

A regular winter visitor, often in large flocks.

75. Lapland Bunting. *Plectrophanes lapponicus* (Linn.).

An accidental winter visitor. One was shot in January 1860, out of a flock of snow-buntings close to Durham, and is now in our Museum.

76. Starling. *Sturnus vulgaris*, Linn.

Most abundant. Has enormously increased of late years. Its numbers diminish in winter.

77. Rose-coloured Starling. *Pastor roseus* (Linn.).

An accidental wanderer. More than a dozen instances of its capture in the county have been reported in the last few years.

78. Jay. *Garrulus glandarius* (Linn.).

The misdirected energies of the game-keeper have all but exterminated the jay in the eastern and central parts of the county, where in the memory of man it was not uncommon. A few may be seen in Wear-dale and in Raby Park.

79. Magpie. *Pica rustica* (Scopoli).

The magpie, like the jay, has almost disappeared, and from the same cause. Very occasionally a brood may be raised in some sequestered wood.

80. Jackdaw. *Corvus monedula*, Linn.

Abundant, though not so numerous as ten years ago.



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## 81. Raven. *Corvus corax*, Linn.

Never now seen, save as a chance wanderer. Within my memory bred in several places, but the native race has been utterly exterminated.

## 82. Carrion-Crow. *Corvus corone*, Linn.

Very rare except on the moors, where it may occasionally be seen.

## 83. Hooded Crow. *Corvus cornix*, Linn.

Very common in winter, especially on the sea coast.

## 84. Rook. *Corvus frugilegus*, Linn.

Abundant in every wooded domain.

## 85. Sky-Lark. *Alauda arvensis*, Linn.

Common in spring, but in rapidly diminishing numbers. Many migrants from the north visit in late autumn.

## 86. Wood-Lark. *Alauda arborea*, Linn.

I know only of one instance of its capture in the county. A pair were shot at Swallowwell in March 1844, and are now in the Hancock Museum, Newcastle.

## 87. Shore-Lark. *Otocorys alpestris* (Linn.).

An irregular winter visitant. Several were captured in 1855, 1857, and 1867. In the winter of 1870-71, four specimens were taken on Seaton Snook, and several others seen.

## 88. Swift. *Cypselus apus* (Linn.).

This charming bird was very common twenty years ago, but alas, is now really rare. Formerly at least twenty pair nested in the western towers of Durham Cathedral; but during a so-called restoration every resort of the swift, as of the barn-owl, was carefully plastered up, and not a bird remains. One solitary pair were the only ones left in the city or vicinity in 1903.

## 89. Nightjar. *Caprimulgus europæus*, Linn.

Not a very uncommon summer visitor, especially on our western moorlands. In the summer of 1862 a pair nested in a corner of Greatham churchyard, not far from the coast.

## 90. Wryneck. *Jynx torquilla*, Linn.

Only an occasional visitor, though it has been known to breed several times in the county.

## 91. Green Woodpecker. *Geococcyx viridis* (Linn.).

Formerly common, now rare. It still breeds in a few woods and parks, as at Raby.

## 92. Great Spotted Woodpecker. *Dendrocopos major* (Linn.).

Occasionally met with at all times of the year in the wooded parts of the county, and breeds regularly in some few localities.

## 93. Kingfisher. *Alcedo ispida*, Linn.

In spite of relentless persecution the kingfisher maintains its existence, though in diminishing numbers, on all our rivers and streams.

## 94. Roller. *Coracias garrulus*, Linn.

A rare accidental visitor. One was taken in 1847 on the Tees, and another by Mr. Gornall at Bishop Auckland, 25 May, 1872.

## 95. Hoopoe. *Upupa epops*, Linn.

A rare accidental visitor. Mr. T. H. Nelson has one obtained by the late Mr. Gornall of Bishop Auckland, and Mr. Cullingford had one which was killed near Durham twenty years ago.

## 96. Cuckoo. *Cuculus canorus*, Linn.

A common spring visitor, universally distributed. Arrives about the middle of April.

## 97. White or Barn-Owl. *Strix flammea*, Linn.

A resident species, formerly common, now becoming rare.

## 98. Long-eared Owl. *Asio otus* (Linn.).

A resident in wooded districts, but threatened with extermination by gamekeepers.

## 99. Short-eared Owl. *Asio accipitrinus* (Pallas).

Generally an autumnal visitor, but some remain on the moors throughout the year. It has been known occasionally to breed. I once took a nestling which I kept alive for two years. In the year of the visitation of field voles this owl was very common. Their numbers vary greatly in different years.

## 100. Tawny Owl. *Syrnium aluco* (Linn.).

The least rare of all the owls. A permanent resident. Two or three pairs frequent the 'Banks' in the city of Durham, nesting in ivy-clad trees in the gardens close to the houses. Two years ago a pair bred in the garden of the Rev. Dr. Greenwell. He was in the habit of feeding them daily, and on leaving home charged his servant to feed them every evening. On his return after some weeks, the servant told him she had set porridge regularly for the owls, and that they had always eaten it. On his exclaiming

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'Nonsense!' and going to the tree, he found abundance of pellets, showing that the porridge had been a successful bait for the rats and mice and saved the owls the trouble of going far afield.

101. Tengmalm's Owl. *Nyctala tengmalmi* (J. F. Gmelin).

An accidental visitor. One was taken at Whitburn, 11 October, 1848, now in the Hancock Museum. Several others have been reported since that date.

The Scops Owl, *Scops giu* (Scopoli), has been set down as occurring in Durham but without sufficient evidence.

102. Snowy Owl. *Nyctea scandiaca* (Linn.).

One was shot near Bishop Auckland on 7 November, 1858.

103. Marsh-Harrier. *Circus æruginosus* (Linn.).

Formerly resident, and nesting. Now exterminated. The last bird of which I have heard was in 1840. In my youth I have several times taken the nest.

104. Hen-Harrier. *Circus cyaneus* (Linn.).

Common and bred regularly in certain localities till about the year 1876. Now only an accidental visitor.

105. Montagu's Harrier. *Circus cineraceus* (Montagu).

Formerly a resident breeding, but now extinct. The last known nest was in 1835. Three or four specimens have been taken in the last fifty years.

106. Common Buzzard. *Buteo vulgaris*, Leach.

*Locally*—Glede.

Now a rare occasional straggler. Within living memory it regularly bred in many parts of the county, but has been exterminated by game preservers aided by egg collectors. I remember, when a boy, having taken three nests of four eggs each, in one season, I think in 1834, none of the nests being a mile apart.

107. Rough-legged Buzzard. *Buteo lagopus* (J. F. Gmelin).

A rare winter visitor. One in Newcastle Museum was taken by the late G. T. Fox at Marsden. Several were shot on the Tees, and one at Bishop Auckland in 1840. I only know of one other instance since that date. The late Raph Carr Ellison of Hedgely informed me that in the seventies a solitary rough-legged buzzard took up its quarters for three winters running, in the woods close to his house. Being a keen naturalist, the bird

was strictly preserved by him, and never left the place, which swarmed with rabbits. I saw the bird myself on one occasion.

108. Golden Eagle. *Aquila chrysaëtus* (Linn.).

We have no record of the golden eagle nesting in this county, though it bred in Northumberland on Cheviot as late as about 1760. It is now the rarest of casual visitors. One in first year's plumage was seen by me, as mentioned in the introduction, on Kilhope Fell. Seldom a year passes but there is a statement in the newspapers of an eagle being seen, generally near the coast, but of which species cannot be ascertained.

109. White-tailed or Sea Eagle. *Haliaëtus albicilla* (Linn.).

A very rare visitor. A specimen was shot on the Tees on 5 November, 1823. Mr. Hancock observed closely a bird of this species in Lambton Park for several days. It went thence on to Ravensworth, where it remained for some time, and finally departed unharmed.

110. Goshawk. *Astur palumbarius* (Linn.).

Does not seem ever in historic times to have been a resident. It is now the rarest of occasional visitors to the county. One, a female, shot in Castle Eden Dene in 1872, and which I saw in the flesh, now in the possession of Col. Rowland Burdon, is the only unquestioned instance I can find.

111. Sparrow-Hawk. *Accipiter nisus* (Linn.).

Very rarely to be seen. In Upper Wear-dale, and in woods near the Tees, a few pairs have hitherto escaped destruction.

112. Kite. *Milvus iclinus*, Savigny.

*Locally*—Red Glebe.

Formerly bred in our woods. Now extinct. Three were shot at Bishop Auckland in 1834, one of which is in Newcastle Museum. I have heard of one or two instances in later years of its occurrence near Stockton.

113. Honey-Buzzard. *Pernis apivorus* (Linn.).

Occurs not infrequently on spring and autumn migration. Though it is known to have bred in Northumberland, I cannot ascertain that the nest has ever been taken in Durham.

114. Peregrine Falcon. *Falco peregrinus*, Tunstall.

Stated by Selby eighty years ago to be 'not uncommon.' Up to 1860 it bred near Weardale Head. The late Mr. Rowland Burdon, of Castle Eden, has often pointed out



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to me the niche in the cliff above Gunner's Pool in Castle Eden Dene, where the peregrine annually bred in his boyhood (*circ.* 1810), strictly preserved by his father. When the falcons disappeared the little platform was taken possession of by a pair of kestrels, and for many years the kestrels reared their young there. Now the peregrine is seen occasionally on the coast and rarely on the moors, in any case only a passing stranger.

115. Hobby. *Falco subbuteo*, Linn.

A casual visitor, but has frequently occurred. Mr. Hogg mentions one shot at Norton; Mr. Hancock had one taken in Streatlam Park; a specimen in Durham Museum was shot at Thornley, in November 1822, and I obtained one at Greatham in 1868. It has been stated, though without sufficient proof, to have nested in Streatlam Park.

116. Merlin. *Falco aesalon*, Tunstall.

This beautiful little falcon was formerly one of the most interesting objects on all our moors, where it bred regularly among the heather or the rocks. It is now but rarely seen, owing to the exterminator, the gamekeeper. There may be a few pairs on the Weardale moors, but I have not seen any of late years.

117. Red-footed Falcon. *Falco vespertinus*, Linn.

Once recorded from the county; a specimen, now in Newcastle Museum, in full male plumage, having been shot near South Shields in October 1836.

118. Kestrel. *Falco tinnunculus*, Linn.

The commonest of our raptorial birds, though vastly reduced in numbers within the last fifty years. Some intelligent game preservers, recognising its value, have forbidden its destruction. I once met a gamekeeper who had just killed a kestrel, averring that its crop was full of young partridges. We opened it—it contained 127 wire-worms. The keeper was silent.

119. Osprey. *Pandion haliaëtus* (Linn.).

A rare occasional visitor, and probably never resident. One, now in the Newcastle Museum, was taken near Heworth on 23 September, 1841. Another was shot at Aldin Grange, near the city of Durham, on 22 October, 1883.

120. Cormorant. *Phalacrocorax carbo*, Linn.

Frequent on the coast. Does not now breed in the county. Many years ago it

nested on Marsden rocks. It often ascends the rivers many miles into the interior.

121. Shag or Green Cormorant. *Phalacrocorax graculus* (Linn.).

Not uncommon on the coast, but not so frequent as the former species.

122. Gannet or Solan Goose. *Sula bassana* (Linn.).

Frequently seen on the coast, occasionally far inland.

123. Heron. *Ardea cinerea*, Linn.

The only remaining heronry in the county is that in the park of Raby Castle. There was formerly another at Ravensworth, the seat of the Earl of Ravensworth, but some of the trees having been cut down the whole colony forsook the neighbourhood, and took to an island in Lake Derwentwater, where they nested on the brushwood. In the beginning of the nineteenth century there were heronries near Sedgfield and Gainford.

124. Little Bittern. *Ardetta minuta* (Linn.).

Is recorded as having once been taken at Stanhope in 1869 (*Zoologist*, 1884, p. 101), though it has occurred several times in Northumberland and frequently in Yorkshire.

The squacco heron *Ardea ralloides*, Scopoli, is said by Seebohm to have occurred once in Durham, but I have been unable to verify this statement. Mr. Saunders (Yarrell, iv. 196) mentions Durham as an accidental locality for the night-heron *Nycticorax griseus* (Linn.). I think this is doubtful.

125. Bittern. *Botaurus stellaris* (Linn.).

The bittern was a resident in some marshy districts within living memory. It is now only an irregular winter visitor, but always late, generally in the month of February. An aged fowler told me some forty years ago, that in his youth a pair always bred in Cowpen marshes, near Stockton. One was shot there in January 1901. Several have been taken near the Tees.

126. Black Stork. *Ciconia nigra* (Linn.).

One morning in August, 1862, my children came running into my study at Greatham Vicarage, to tell me a black stork was walking about in the Seaton fields. (They were familiar with the bird, as a mounted specimen stood in the hall.) I went out and watched the bird for an hour, marching about in a swampy meadow. The next morning it was still there, but was shot in the afternoon by a man from Hartlepool. It is now in the Hartlepool Museum.



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127. Glossy Ibis. *Plegadis falcinellus* (Linn.).

The only occurrence of this occasional straggler to our coasts, was one shot at Billingham, near Stockton on 25 November, 1900.

128. Grey Lag-Goose. *Anser cinereus*, Meyer.

Generally occurs in the marshes near Teesmouth in winter, but in very small numbers. The scarcest of all our familiar wild geese, though for thirteen years that I lived close to the marshes seldom a season passed without one specimen at least being brought to me.

129. White-fronted Goose. *Anser albifrons* (Scopoli).

A not uncommon winter visitor on the coast, especially in hard weather. Seldom in any large number.

130. Bean-Goose. *Anser segetum* (J. F. Gmelin).

The most abundant of all our geese in winter, arriving early in November. They often come far inland to feed, but always roost by the sea shore.

131. Pink-footed Goose. *Anser brachyrhynchus* Baillon.

Frequent in winter on our coast and in the estuary of the Tees.

132. Red-breasted Goose. *Bernicla ruficollis* (Pallas).

The first two specimens of this bird known to have occurred were taken at the beginning of the year 1776. One shot near London, which came into the possession of Mr. Tunstall, is now with the rest of the Wycliffe Museum in Newcastle Museum, and is figured by Bewick; the other was taken alive on the Tees, and lived for nine years with ducks on a pond near Mr. Tunstall's residence. One is stated to have been shot in 1845 in Cowpen Marsh, which has produced so many rarities, by Mr. J. Hikely, and two are said to have been seen the same year on the Tees.

133. Bernacle Goose. *Bernicla leucopsis* (Bechstein).

A winter visitor. Not so common as the Brent.

134. Brent Goose. *Bernicla brenta* (Pallas).

A common autumn and winter visitor to the coast.

[Egyptian Goose. *Chenalopex ægyptiacus* (Linn.).

Shot several times on the coast, never inland. Three were brought to me at different times

in twelve years by the gunners on Cowpen Marsh. None of them showed any signs of having been in captivity.]

135. Whooper Swan. *Cygnus musicus*, Bechstein.

Frequently taken, especially in hard winters, on the coast.

136. Bewick's Swan. *Cygnus bewicki*, Yarrell.

By no means so rare as is frequently supposed. It visits us irregularly in hard winters, sometimes in flocks. Three were taken together at Blaydon in February 1887.

137. Mute Swan. *Cygnus olor* (J. F. Gmelin).

Not unfrequently shot in winter. These may very possibly be wild birds from their northern homes in Sweden and Denmark.

138. Common Sheldrake. *Tadorna cornuta* (S. G. Gmelin).

Formerly a well-known breeding species on the sandhills and rabbit warrens by the coast, especially about Seaton and Teesmouth. Sixty years ago there were several pair in the rabbit warren of Middleton, now in the heart of West Hartlepool. The bird is now only an occasional straggler, though in Northumberland it still breeds.

139. Ruddy Sheldrake. *Tadorna casarca* (Linn.).

The only recorded occurrence is the appearance of a small flock in the interior of the county, one of which was shot and brought to Mr. Cullingford for preservation on 23 September, 1892.

140. Mallard or Wild Duck. *Anas boschas*, Linn.

Still found in all suitable localities. In many, a breeding species.

141. Shoveller. *Spatula clypeata* (Linn.).

A rather scarce spring and autumn migrant, sometimes breeding. A pair nested at Salholme in 1881. (*Zoologist*, 1882, p. 90.)

142. Pintail. *Dafila aceta* (Linn.).

A rather scarce winter visitor. Said to have formerly bred in the county.

143. Teal. *Querquedula crecca* (Linn.).

A resident. Still breeds in small numbers in Upper Weardale and Teesdale.

144. Garganey. *Querquedula circia* (Linn.).

A rare visitor. One was shot in Cowpen Marsh on 3 September, 1882.

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145. Wigeon. *Mareca penelope* (Linn.).

A common autumn and winter visitor.

146. Pochard. *Fuligula ferina* (Linn.).

Frequently met with throughout the winter. Said to breed here occasionally, but I have no certain proof, though it breeds sometimes in North Yorkshire and Northumberland.

147. Ferruginous Duck. *Fuligula nyroca*, (Güldenstädt.).

Has been shot twice at the mouth of the Tees.

148. Tufted Duck. *Fuligula cristata* (Leach).

A not very common winter visitor, though breeding in Northumberland. A pair shot at Elton, near Stockton, by Mr. Sutton.

149. Scaup-Duck. *Fuligula marila* (Linn.).

Abundant in winter on the coast.

150. Goldeneye. *Clangula glaucion* (Linn.).

A common winter visitor on the coast, generally females or young.

151. Long-tailed Duck. *Harelda glacialis*, (Linn.).

Occurs frequently on the coast in winter. Many were shot at Teesmouth in 1887.

152. Eider Duck. *Somateria mollissima* (Linn.).

Though largely increased, owing to protection in its breeding places in Northumberland, it is only a winter straggler to the Durham coast.

153. Common Scoter. *Ædemia nigra* (Linn.).

Common in winter on the coast.

154. Velvet-Scoter. *Ædemia fusca* (Linn.).

An irregular winter visitor, often in company with the common scoter. On the Tees one was taken 18 October, 1881, and another 19 November, 1889. These were early visitors.

155. Goosander. *Mergus merganser*, Linn.

A not uncommon winter visitor, often found some distance up our rivers, and on inland tarns. One was taken lately on the Wear in the city of Durham.

156. Red-breasted Merganser. *Mergus serrator*, Linn.

Scarcely so common as the last species, nor does it habitually go so far inland, but found every winter.

157. Smew. *Mergus albellus*, Linn.

An irregular and rare visitor. In the winter of 1869-70 two males in full plumage were

taken in the city of Durham, and one at Bishop Auckland in January 1838. All those that I have known of have been taken inland.

158. Ring-Dove or Wood-Pigeon. *Columba palumbus*, Linn.

A permanent resident, rapidly increasing. In autumn its numbers are recruited by large flocks from the north.

159. Stock-Dove. *Columba ænas*, Linn.

Formerly utterly unknown in the north. Its first recorded appearance was at Elton in 1862 or 1863. In 1867 and perhaps a year or two earlier it bred there. It was first noticed in Castle Eden Dene on 26 October, 1869. The specimen is now in Durham Museum. In 1871 it bred in Castle Eden Dene, as well as at Elton, and close to Durham. Since then it has spread over the whole county as a spring and summer migrant. It nests regularly in the 'Banks' in the city of Durham. I should mention that the Wear forms a peninsula, and on both sides is the city. The banks of the river are steep and well wooded, with many old gardens sloping to the water's edge. The stock-dove nests in the old trees and in drains. There were seven nests in 1902. A pair have regularly laid their eggs in a drain in the centre of the Prebends' Bridge, entering by a gurgyle quite out of the reach of boys. Another took possession of a drain by the side of the cathedral, entering by a similar gurgyle in the face of the cliff, and made their nest immediately under a grating in the middle of the gravel walk in the monks' garden. The eggs were swept away by a thunder shower.

160. Rock-Dove. *Columba livia*, J.F. Gmelin.

Breeds in decreasing numbers in Marsden Rocks, and occasionally in the Blackhall Rocks near Castle Eden.

161. Turtle-Dove. *Turtur communis*, Selby.

Formerly unknown save as an occasional straggler. Now a few are found every spring, and I have reason to believe have bred at Castle Eden, and near Sedgfield and Wolsingham.

162. Pallas's Sand-Grouse. *Syrhaptes paradoxus* (Pallas).

This sand-grouse, first observed in Britain in 1859, did not occur in Durham till the great irruption of 1863. From the month of May to July many were seen and taken on the coast, on the sandhills of Seaton, and Cowpen marshes. I saw a flock of nearly twenty for several days, but I regret to say



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most of them were shot. Another irruption, during which numbers were shot all over the county, was in the spring of 1888, when Mr. Cullingford had over sixty specimens brought to him.

### 163. Black Grouse. *Tetrao tetrix*, Linn.

*Locally*—Moor-fowl.

Formerly very abundant, and found in every suitable part of the county. Now restricted to a few wild localities in the west of the county, where its numbers are every year diminishing, chiefly from the indiscriminate slaughter of the hens by strangers who hire the shooting for a year. In the leases of the Prior and Monks of Durham in the fourteenth century we find conditions of supplying so many moor-fowl a year. The grandfather of the present Rowland Burdon, of Castle Eden, used to shoot black game on his estate close to the sea a hundred and twenty years ago.

### 164. Red Grouse. *Lagopus scoticus* (Latham).

Abundant on the moors in the west. The Durham and North Yorkshire moors are said to be the best stocked in the country, and the birds are decidedly heavier than the Scottish ones. A hundred years ago grouse still lingered on the patches of heath and moorland in the east of the county, as at Hartbushes near Castle Eden.

### 165. Pheasant. *Phasianus colchicus*, Linn.

Universal wherever preserved. Generally shews traces of the ringnecked species.

### 166. Partridge. *Perdix cinerea*, Latham.

Plentiful in ordinary seasons.

### 167. Red-legged Partridge. *Caccabis rufa* (Linn.).

A rare accidental straggler. Breeds in the East Riding of Yorkshire. A number were turned out by Prince Duleep Singh when he leased Mulgrave Castle, and since then they are occasionally shot north of the Tees, as at Elton.

### 168. Quail. *Coturnix communis*, Bonnaterra.

An irregular spring and summer visitor, occasionally nesting. In the year 1868 a brood of at least eight was raised in a meadow at Greatham. Two young birds were shot in September. The remainder I have every reason to believe got away safely, but none returned the next year.

### 169. Corn Crake, or Land-rail. *Crex pratensis*, Bechstein.

A regular spring and summer visitor, but much diminished of late years.

### 170. Spotted Crake. *Porzana maruetta* (Leach).

A summer visitor, less rare than is commonly supposed. It has not unfrequently nested in different parts of the county—near Durham city, and for several years on Bolden Flats. It has been taken as late as 19 November.

### 171. Baillon's Crake. *Porzana bailloni* (Vieillot).

One specimen shot on the banks of the Derwent, 12 July, 1874. Bewick mentions the capture of the 'little crake,' but there are no means now of ascertaining the species.

### 172. Water-Rail. *Rallus aquaticus*, Linn.

Not uncommon in suitable localities. Breeds occasionally.

### 173. Moor Hen, or Water Hen. *Gallinula chloropus* (Linn.).

Very abundant. Resident throughout the year.

### 174. Coot. *Fulica atra*, Linn.

By no means uncommon. Inhabits our larger ponds and tarns.

### 175. Pratincole. *Glareola pratincola*, Linn.

The only instance on record is one taken at Stanhope on 10 July, 1876.

### 176. Stone-Curlew. *Ædicnemus scolopax* (S. G. Gmelin).

A rare accidental visitor. One was taken near South Shields on 4 February, 1864, and another at Teesmouth on 11 January, 1901.

### 177. Dotterel. *Eudromias morinellus* (Linn.).

Passes every year in some numbers both at spring and autumn migration. It is said to have bred formerly on Kilhope, but not in my memory.

### 178. Ringed Plover. *Ægialitis hiaticula* (Linn.).

A resident by the sea shore, where it breeds on gravelly beaches.

### 179. Golden Plover. *Charadrius pluvialis*, Linn.

A resident on the moorlands in the west, where it breeds. In winter common by the sea shore along with the lapwing.

### 180. Grey Plover. *Squatarola helvetica* (Linn.).

Not uncommon, chiefly on the coasts in winter, but occurs at other seasons. In the collection at Elton is a specimen in full summer dress, shot there by Mr. Sutton. Mr. Hancock mentions several other instances.



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181. Lapwing or Peewit. *Vanellus vulgaris*, Bechstein.

*Locally*—Peesweep.

Common in the east, though in sadly diminishing numbers. In the wilder parts of the county very abundant.

182. Turnstone. *Streptilas interpres* (Linn.).

A regular visitor to the coast.

183. Oyster-catcher. *Hamatopus ostralegus*, Linn.

Not uncommon on the coast. Breeds here occasionally.

184. Avocet. *Recurvirostra avocetta*, Linn.

Saunders' edition of *Yarrell* mentions its having been taken two or three times at Teesmouth. I have not been able to find the authority. It has been taken at Hartley, but that is in Northumberland.

185. Grey Phalarope. *Phalaropus fulicarius* (Linn.).

An irregular visitor on the coast. Two taken in 1824 at Haverton Hill are mentioned by Hogg.

186. Woodcock. *Scolopax rusticola*, Linn.

Has for over ten years bred in the county and does so still, but the number shot have considerably diminished of late years. Two years ago there was a nest close to Durham city.

187. Great Snipe. *Gallinago major* (J. F. Gmelin).

Rarely an autumn passes without one or more specimens being recorded. Selby mentions their appearance in 1826. I possess a specimen, adult, shot in that autumn by Lord Barrington's keeper at Sedgfield.

188. Common Snipe. *Gallinago cœlestis* (Frenzel).

Still breeds in a few favoured and undrained localities. By far the larger number are migrants.

189. Jack Snipe. *Gallinago gallinula* (Linn.).

A regular autumn and winter visitor, but in small numbers.

190. Pectoral Sandpiper. *Tringa maculata*, Vieillot.

Accidental. Has been recorded three times, from Hartlepool, Teesmouth, and Bishop Auckland.

191. Dunlin. *Tringa alpina*, Linn.

In large numbers on the coast in winter. Formerly bred on the moors in the west, and possibly does so still in small numbers.

192. Little Stint. *Tringa minuta*, Leisler.

A rare visitor on its autumnal migration, generally in September.

193. Temminck's Stint. *Tringa temminckii*, Leisler.

A very rare autumnal visitor. Has been taken in the estuary of the Tees.

194. Curlew-Sandpiper. *Tringa subarquata* (Güldenstädt).

In small numbers on the sea shore and estuaries in winter, often in company with dunlins.

195. Purple Sandpiper. *Tringa striata*, Linn.

Occurs occasionally on the sea shore in autumn and winter.

196. Knot. *Tringa canutus*, Linn.

A fairly common autumnal migrant. A few remain on the coast through the winter.

197. Sanderling. *Calidris arenaria* (Linn.).

Common on the coast in autumn and winter, especially in October. It has been shot several times in June in full summer plumage at Seaton and Teesmouth.

198. Ruff and Reeve. *Machetes pugnax* (Linn.).

Now a rare and uncertain visitor. Bred in Northumberland up to 1853, and said on reliable authority to have formerly nested on Bolden Flats. Was taken in Cowpen Marsh on 3 September, 1881.

199. Common Sandpiper. *Totanus hypoleucus* (Linn.).

A regular spring and autumn migrant, breeding in suitable localities.

200. Wood Sandpiper. *Totanus glareola* (J. F. Gmelin).

A rare and uncertain autumn migrant.

201. Green Sandpiper. *Totanus ochropus* (Linn.).

A rare and irregular visitor, generally inland. Has been recorded from Hilton Castle, October, 1830; Streatlam Park, 1838; Elton, 188? Castle Eden Dene, 1860; Bishop Auckland, 1849; Mainsforth, 1903.

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202. Redshank. *Totanus calidris* (Linn.).

Common in winter ; a few remain throughout the year, but their former nesting resorts are now drained. I am assured a few still nest in Upper Weardale.

203. Spotted Redshank. *Totanus fuscus* (Linn.).

An accidental straggler, recorded from Blanchland 12 August, 1840, also Jarrow and Elton, dates uncertain.

204. Greenshank. *Totanus canescens* (J. F. Gmelin).

Occurs occasionally at spring and autumn migration. Taken at Castle Eden and Elton.

205. Bar-tailed Godwit. *Limosa lapponica* (Linn.).

Not uncommon in autumn on the coast. A few occur occasionally in winter and spring.

206. Black-tailed Godwit. *Limosa ægocephala* (Linn.).

A rare visitor on autumnal and vernal migration. I find no trace of its ever having nested in the county.

207. Curlew. *Numenius arquata* (Linn.).

Local—Whaup.

Resident. Many breed on the moors in the west. In winter great numbers frequent the sea shore and marshes.

208. Whimbrel. *Numenius phæopus* (Linn.).

Spends the winter regularly on the coast in small parties, frequenting the salt marshes of Cowpen.

209. Black Tern. *Hydrochelidon nigra*, Linn.

An occasional visitor. Specimens are in the Castle Eden and Elton local collections. One was taken in the Tees, 7 August, 1886.

210. White-winged Black Tern. *Hydrochelidon leucoptera*, Schinz.

Once obtained at Port Clarence, Teesmouth, on 15 May (year unknown), now in the Newcastle Museum.

211. Sandwich Tern. *Sterna cantiaca*, J. F. Gmelin.

Not infrequent in summer, as numbers breed in Northumberland.

212. Common Tern. *Sterna fluviatilis*, Naumann.

In summer, but not so abundant as the Arctic tern.

213. Arctic Tern. *Sterna macrura*, Naumann.

Common in summer and early autumn.

214. Little Tern. *Sterna minuta*, Linn.

A summer visitor, rather rare.

215. Sabine's Gull. *Xema sabinii*, J. Sabine.

One was shot at Seaham Harbour on 10 October, 1879, and is now in Newcastle Museum.

216. Little Gull. *Larus minutus*, Pallas.

An almost regular autumn and winter visitor, occurring in most local collections. I had three specimens brought to me from Cowpen Marsh in different years. Mr. Abel Chapman shot one in 1886, at Whitburn, as early as 28 August.

217. Black-headed Gull. *Larus ridibundus*, Linn.

Very common, though it has no breeding place left in the county. Comes far inland, and may be seen following the plough thirty miles from the coast.

218. Common Gull. *Larus canus*, Linn.

Abundant, and resident throughout the year, but does not breed in the district.

219. Herring Gull. *Larus argentatus*, J. F. Gmelin.

A non-breeding resident. Abundant.

220. Lesser black-backed Gull. *Larus fuscus*, Linn.

A very common species. Resident throughout the year, but breeding in Northumberland.

221. Great black-backed Gull. *Larus marinus*, Linn.

Not abundant, but always to be found off the coast in winter.

222. Glaucous Gull. *Larus glaucus*, Fabricius.

A not very rare winter visitor, generally in immature plumage.

223. Kittiwake. *Rissa tridactyla*, Linn.

Common throughout the year, but has no breeding station.

224. Ivory Gull. *Pagophila eburnea*, Phipps.

A specimen in immature plumage was taken at Seaton Carew in February 1837, and is now in Sunderland Museum.

225. Great Skua. *Stercorarius catarrhactes*, Linn.

A rare winter visitor. One was captured off the Tees on 14 October, 1887.

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226. Pomatorhine Skua. *Stercorarius pomatorhinus*, Temminck.

Occurs not unfrequently, especially in the estuary of the Tees.

227. Arctic or Richardson's Skua. *Stercorarius crepidatus*, J. F. Gmelin.

Frequent on the coast, chiefly in early winter.

228. Long-tailed or Buffon's Skua. *Stercorarius parasiticus*, Linn.

Occasionally in winter. At Whitburn in 1837. Several off the Tees in 1879. I know of five other specimens taken in the county, dates uncertain.

- [Great Auk. *Alca impennis*, Linn.

Though we have every reason to believe that the great auk was taken in Northumberland in the early part or middle of the eighteenth century (Hancock, *Birds of Northumberland and Durham*, p. 165), yet there is no trace of it in Durham in historic times. But it may claim a place here, from the discovery in the spring of 1878, in one of the seaworn caves in the face of the Whitburn Lizards, of the remains of the great auk. The birds had evidently been eaten by man, for many human bones, including five skulls, were found in the caves, as well as those of all our domestic animals, and of the red deer, roe, badger, marten-cat, and many others. The bones are now in the Newcastle Museum. See *Nat. Hist. Trans., Northumb.*, vii. 361, seqq.]

229. Razorbill. *Alca torda*, Linn.

Common on the coast throughout the year.

230. Common Guillemot. *Uria troile*, Linn.

Abundant at all seasons, but, like the razorbill, not breeding in our limits.

231. Black Guillemot. *Uria grylle*, Linn.

Occurs only in winter. Not uncommon.

232. Little Auk. *Mergulus alle*, Linn.

An uncertain winter visitor, sometimes arriving in great numbers. One of these irruptions was in October 1841, when hundreds appeared off Hartlepool and the Tees, and many were picked up far inland. Another invasion was on 5 December, 1895 to January 1896, when between thirty to forty specimens were brought to Mr. Cullingford, Durham Museum, of which one at least was picked up dead in the city.

233. Puffin. *Fratercula arctica*, Linn.

Common on the coast. Resident, but has no breeding stations.

234. Great Northern Diver. *Colymbus glacialis*, Linn.

Occasional in winter. Seldom a season passes without one or two being taken at Teesmouth. Its occurrence in summer plumage is very rare.

235. Black-throated Diver. *Colymbus arcticus*, Linn.

More frequent than the last. One was captured on the Wear, near Durham city, in full summer dress.

236. Red-throated Diver. *Colymbus septentrionalis*, Linn.

Not uncommon in winter, and occurs at other seasons. I have had three specimens from Cowpen Marsh in nuptial dress.

237. Great Crested Grebe. *Podiceps cristatus*, Linn.

A rare straggler, only on the coast. One at Elton, another taken at Teesmouth, 12 January, 1901.

238. Red-necked Grebe. *Podiceps griseigena*, Boddaert.

An occasional winter visitor. There are specimens in all our local museums, but without dates. Off the Tees, 19 November, 1892.

239. Slavonian Grebe. *Podiceps auritus*, Linn.

Not uncommon in winter. Hogg mentions one near Stockton in 1823, but of late years it has been frequently taken.

240. Eared Grebe. *Podiceps nigricollis*, Bre.

A very rare visitor. I only know of one Durham specimen, in Mr. Sutton's collection.

241. Little Grebe or Dabchick. *Podiceps fluvialis*, Tunstall.

Still breeds on the Tees, and occasionally on tarns and ponds throughout the county, generally distributed.

242. Storm-Petrel. *Procellaria pelagica*, Linn.

Not unfrequently found after a storm, and has been picked up dead some distance inland. In December 1895 and January 1896 many were taken. One was picked up dead in an inn yard in the city of Durham.

243. Leach's Fork-tailed Petrel. *Oceanodroma leucorhoa*, Vieillot.

Accidental. One specimen washed ashore north of Hartlepool, date uncertain.



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244. Great Shearwater. *Puffinus major*,  
Fabri.

One captured off the Tees, January or February 1874. A few years ago one was picked up dead about the same place and brought to Mr. Cullingford, Durham Museum.

245. Sooty Shearwater. *Puffinus griseus*, J. F.  
Gmelin.

A single specimen shot on the Tees off Redcar. (*Zoologist*, 1884, p. 147.) The first recorded British example was shot at the

mouth of the Tees in August, 1828 (*Proc. Zool. Soc.*, 1832, p. 129), described by Strickland.

246. Manx Shearwater. *Puffinus anglorum*,  
Temminck.

An occasional visitor in winter. Has occurred at Castle Eden, Hartlepool, and Seaton Carew.

247. Fulmar. *Fulmarus glacialis*, Linn.

A rare winter visitor. Has been obtained five times of late years on our coast.

# MAMMALS

The varied surface of the county of Durham offers, or has offered in the past, congenial haunts for most of the British mammals. In the western part of the county the extensive moorlands and the secluded and wooded valleys have served as retreats for some of the wilder species; and though the coal mining and other industries have had, from the naturalist's point of view, an unfavourable influence on the eastern part, this has not been the case to nearly the extent that might have been expected. The coast line also enriches the fauna by the addition of a number of marine mammals, whilst the operations in caves and bogs, and in the dredging of the larger rivers, have brought to light many interesting evidences of the former presence of animals which have long since disappeared from the district. The paucity of records for the county of Durham in comparison with those for many other counties is regrettable. An excellent summary of the known facts relating to the mammal fauna up to the year 1863 is given in the catalogue by Messrs. Mennell and Perkins<sup>1</sup>; but since that time very little systematic observation has apparently been attempted. An especially interesting field for investigation is presented by the local bats, to which hardly any critical attention has been paid for many years. A few points regarding particular animals are worthy of special note. The wild cat (*Felis catus*) appears to have survived in the county until about fifty years ago; the pine marten (*Mustela martes*) and polecat (*Putorius putorius*) have only been exterminated within comparatively few years, and recent occurrences in the neighbouring counties even render it not altogether improbable that one or both may yet stray within the borders again; the old English black rat is almost certainly still in existence in one or two towns within the county. In reference to the cetaceans, it is a curious fact that while I am only able to record five species for this county, at least double the number have been obtained on the coast between the Tyne and the Tweed.

## CHEIROPTERA

### 1. Long-eared Bat. *Plecotus auritus*, Linn.

This bat is abundant in the county, and is perhaps the commonest species.

### 2. Great or White's Bat (Noctule). *Pipistrellus noctula*, Schreber.

Bell—*Scotophilus noctula*. White—*Vespertilio altivolans*.

I believe this fine species is not uncommon

in the southern part of the county. It is plentiful in places a little south of the Tees, and I have the following records for the county itself: Mr. H. G. Stobart has shot it at Croft; Mr. J. Greenwell describes a bat, evidently of this species, which he frequently sees at Escombe; in the *Naturalist* for 1886, Mr. W. D. Roebuck records the taking of twenty-five noctules from an oak near Barnard Castle; and

<sup>1</sup> *Trans. Tyneside Naturalists' Field Club*, vi.

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in the same volume Mr. T. H. Nelson mentions that one was shot at the Flats, near Bishop Auckland, in the summer of 1885. Mennell and Perkins do not give the species, but the bat taken at Cleadon in 1836 and referred to in their catalogue as a serotine has been examined in the Newcastle Museum by Messrs. Roebuck and Southwell and found by them to be a noctule (*Zoologist*, 1887).

### 3. Pipistrelle. *Pipistrellus pipistrellus*, Schreber.

Bell—*Scotophilus pipistrellus*.

This species is common throughout the county.

### 4. Natterer's Bat. *Myotis nattereri*, Kuhl.

Bell—*Vespertilio nattereri*.

Mennell and Perkins record the taking of a Natterer's bat 'on a tree in Hoffal Wood, Durham,' on the authority of the late W. Backhouse. I cannot hear of any subsequent instance of the capture of this species in the county.

### 5. Daubenton's Bat. *Myotis daubentoni*, Leisler.

Bell—*Vespertilio daubentonii*.

W. Backhouse, quoted by Mennell and Perkins, reported the occurrence of this bat at Darlington, apparently on good evidence. In the same catalogue a white variety is mentioned, taken at 'Auckland St. Andrew, Durham.' As the species is widely distributed in Scotland and is also found in Yorkshire, there is a strong probability that it occurs fairly frequently in Durham.

### 6. Whiskered Bat. *Myotis mystacinus*, Leisler.

Bell—*Vespertilio mystacinus*.

The whiskered bat is pretty generally distributed in Yorkshire (Roebuck and Clarke), and has been taken several times in Cumberland (*Zoologist*, 1890). It is therefore probably not rare in the county of Durham; but the only records I know of are those of W. Backhouse from 'Shotley Bridge (Darlington?),' quoted in Mennell and Perkins' catalogue, and the allusion in the *Zoologist* for 1888 to a specimen from Durham.

## INSECTIVORA

### 7. Hedgehog. *Erinaceus europæus*, Linn.

This animal is common in all the more wooded parts of the county.

### 8. Mole. *Talpa europæa*, Linn.

Moles are as abundant here as elsewhere. Varieties of a cream or silver-grey colour are by no means uncommon, and I have records of such from many parts of the county. These varieties often have a more or less brilliant tinge of orange on the under-side and flanks. Several instances of this have been reported from Winlaton by Mr. Thos. Thompson, and a silver-grey mole with the orange tinge was sent to the Newcastle Museum in 1903 from the Woodlands, Consett, by Mr. W. B. van Haansbergen.

### 9. Common Shrew. *Sorex araneus*, Linn.

This species is very abundant, as in all parts of the country.

### 10. Pigmy Shrew. *Sorex minutus*, Pallas.

Bell—*Sorex pygmæus*.

The only positive evidence of the occur-

rence of the pigmy shrew that I have been able to find is that afforded by a specimen in the Newcastle Museum. This is labelled as having been taken at St. John's, Wolsingham, by Wm. Backhouse; it was sent by him to John Hancock about 1850. The species is probably not so scarce as the absence of further records might suggest.

### 11. Water Shrew. *Neomys fodiens*, Pallas.

Bell—*Crossopus fodiens*.

This species is probably distributed generally through the county on quiet streams and ponds, but is not often noticed, as is frequently the case where it is quite common. Mennell and Perkins gave records from Castle Eden and Darlington; Mr. R. Lofthouse mentions it (*Naturalist*, 1887) as occurring on the lower part of the Tees, and I have the following additional records:—near Wolsingham, common (W. Backhouse); Upper Teesdale, fairly common (W. Walton); on a pond close to the city of Durham (J. Cullingford); on the small 'stells' about Hartlepool before these were built over (J. E. Robson).

## CARNIVORA

### 12. Wild Cat. *Felis catus*, Linn.

The wild cat held its ground in the county of Durham down to considerably more recent times than was the case in most parts of Eng-

land, as might have been expected from the character of much of the district. Exact records are, however, almost entirely wanting; but the fact stated by Canon Tristram, that it



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was to be found up to about the year 1840 in Castle Eden Dene, by no means one of the most secluded parts of the county, renders it probable that in the more remote and uncultivated parts the wild cat was not exterminated until at least the middle of the last century. It is rather remarkable that no remains of this animal appear to have been noticed in any of the limestone caves that have been explored, though bones of the wolf, badger, and even of the marten, are not scarce.

## 13. Fox. *Vulpes vulpes*, Linn.

Bell—*Vulpes vulgaris*.

Foxes are plentiful in almost all parts of the county.

## 14. Pine Marten. *Mustela martes*, Linn.

Bell—*Martes abietum*.

At the time when Mennell and Perkins were compiling their catalogue (1863) they were able to say of the pine marten that 'although the animal cannot be called common, it is widely distributed over both counties.' It is difficult to imagine that the marten was not somewhat scarcer at that date than the wording of this statement might be taken to imply, though its final extermination, due largely to the increased use of steel traps, probably took place very rapidly. The last known capture in this county was on 31 May, 1882, at Hoppyland, a few miles west of Bishop Auckland; it is recorded (*Zoologist*, 1882) by Mr. T. H. Nelson, who also refers to the taking of a nest with three young at the same place thirty-three years previously. It is an interesting fact that from among the remains of human and other occupants discovered in a cave near the coast at Whitburn, bones of the marten were identified by the late Mr. John Hancock (*Nat. Hist. Trans. Northumb. and Durham*, vii.).

## 15. Polecat. *Putorius putorius*, Linn.

Bell—*Mustela putorius*.

From the information I have been able to obtain, it would appear that the polecat has been exterminated in the county only within the last ten or twelve years. Mr. J. Cullingford had several before that time, but has had none since; and Mr. W. Walton reports two killed near Middleton-in-Teesdale about fifteen years ago, one being still in his possession. Mr. G. E. Crawhall tells me that up to forty years ago polecats were not infrequently killed in Weardale, but that he has heard of none there in more recent years. He remembers a female and litter of young being caught near Wolsingham. Mennell and Perkins describe it (1863) as 'still plentiful in both our

counties'; and the following is also quoted from their catalogue: 'The Rev. G. C. Abbes tells us that a very fine polecat visited his garden at Cleadon a few years ago, and was so bold and fearless that it came close to him when gardening, and suffered him to push it back with his rake when it interfered with his work.'

## 16. Common Stoat. *Putorius ermineus*, Linn.

Bell—*Mustela erminea*.

The stoat is abundant in nearly all parts of the district. Examples in the white winter coat and in all stages of approach to it are frequently killed or seen.

## 17. Weasel. *Putorius nivalis*, Linn.

Bell—*Mustela vulgaris*.

As common here as elsewhere. An albino example from upper Teesdale is reported by Mr. W. Walton.

## 18. Badger. *Meles meles*, Linn

Bell—*Meles taxus*.

The badger has held its ground successfully in the county of Durham. It is fairly plentiful in the more secluded western half of the county, and also inhabits some of the quieter woodlands of the eastern half. The Rev. Canon Tristram has given me some interesting information regarding the badgers in Castle Eden Dene. They were common there at one time, but disappeared for some years; for the last five or six years, however, several pairs have been known to be in the dene. A female with a litter of young was once kept there in confinement, living on good terms both with her captors and with the pigs. Canon Tristram tells me, 'the local name of the badger is "pate," and a small subsidiary glen is known as the "Pate-priest's Dene," from a French refugee priest who lived a hermit life 110 years ago in the glen, and was much given to badger hunting.' A large number of bones of the badger were found in the Whitburn cave. The late Richard Howse in mentioning this fact (*Nat. Hist. Trans.* vii.) states that the badger 'has now disappeared from our locality' and only survives in some of the southern counties, an opinion which seems to have been general at the time (1878).

## 19. Otter. *Lutra lutra*, Linn.

Bell—*Lutra vulgaris*.

Otters are still plentiful on the streams and rivers of the county and frequently descend to the neighbourhood of the towns. They are occasionally seen near the bridges at Durham (J. Cullingford), and individuals have been

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captured in Middlesborough and Stockton (R. Lofthouse).

### 20. Common Seal. *Phoca vitulina*, Linn.

A large colony of seals formerly existed and bred on Seal Sand at the mouth of the Tees; but the great development of the Cleveland iron industry and the consequent increase of traffic on the river, together with the extensive works of the Tees Commissioners, have led to the complete desertion of the place. Mennell and Perkins state that about a thousand seals frequented the Tees mouth between 1820 and 1830; from the excellent account of the colony given by Mr. R. Lofthouse in the *Naturalist* for 1887, it appears that it was

reduced to twenty or thirty seals by about the year 1867. The final desertion probably took place not long afterwards. But seals are still frequently seen on the coast (Canon Tristram, R. Lofthouse, and others), and sometimes enter the rivers. They appear to retain a preference for the vicinity of Hartlepool and the Tees.

### 21. Grey Seal. *Halichærus grypus*, Fabr.

This large seal probably visits the Durham coast only very rarely. One was found at Seaton Snook in 1871 (Clarke and Roebuck); and Mr. R. Lofthouse mentions several instances in which large seals, probably of this species, have been seen about the mouth of the Tees.

## RODENTIA

### 22. Squirrel. *Sciurus leucourus*, Kerr.

Bell—*Sciurus vulgaris*.

The squirrel is plentiful in the wooded parts, though perhaps hardly so abundant on the whole as in the more southern counties. Formerly it appears to have been scarcer or at least less evenly distributed than at present. Canon Tristram writes, 'in my boyhood it was unknown here,' that is, about the city of Durham, and in Mennell and Perkins' catalogue he reported it as having been 'once seen' at Castle Eden.

### 23. Dormouse. *Muscardinus avellanarius*, Linn.

Bell—*Myoxus avellanarius*.

The dormouse is certainly rare in the county, but the recorded instances of its occurrence suggest that it might be found more frequently by careful watching. Mennell and Perkins state that 'it has been taken occasionally in the woods which clothe the valley of the Derwent, at Gibside, Winlaton Mill, and near Ebchester (*Trans. Nat. Hist. Soc. i.*, p. 335).' It has also been seen by Mr. N. M'Lachlan at Headlam (*Zoologist*, 1885); Mr. J. Greenwell mentions 'one taken near Hamsterley about fifty years ago,' and Mr. J. Cullingford informs me that he has had two from close to the city of Durham within the last four years. A mouse described by Mr. F. Fenwick from the Wolsingham district is most likely of this species—'chestnut coloured, with white breast, builds its nest in hazel bushes of dried grass; rare.'

### 24. Brown Rat. *Mus decumanus*, Pallas.

As common here as elsewhere. Mr. R. Lofthouse (*Naturalist*, 1887) notes the fact that it 'swarms in all the reclamation embankments

constructed by the Tees Commissioners, particularly those constructed of slag.'

### 25. Black Rat. *Mus rattus*, Linn.

This interesting species is probably not yet quite exterminated in the county of Durham. Mennell and Perkins, in 1863, were able to mention 'Stockton, where, as in many other places in our district, the species still lingers, though in constantly diminishing numbers.' It still existed in old warehouses at Stockton in 1887 (Lofthouse), and in all probability survives there at the present day. Examples from Stockton (1868) are in the Newcastle Museum, and Canon Tristram also has one from there (1873). For particulars of its former presence in Durham I am again indebted to Canon Tristram, who tells me in a letter, 'There was a colony of black rats in and about Durham Cathedral which had been there from time immemorial. When at Durham School, in the thirties, I knew of them, and they were said to visit the school, which was then in the churchyard. The last known to have been taken was in the year 1879; a trap was set for it by the verges.' Mr. J. Cullingford doubts whether the black rat is even now exterminated in Durham, and tells me that about seven years ago one was killed near the town by the late Mr. F. Greenwell.

### 26. House Mouse. *Mus musculus*, Linn.

Very common about habitations everywhere.

### 27. Long-tailed Field Mouse. *Mus sylvaticus*, Linn.

This species is plentiful, at any rate in the wooded and cultivated parts of the county.

### 28. Harvest Mouse. *Mus minutus*, Pallas.

The harvest mouse appears to have been very rarely noticed in the county of Durham



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and is doubtless scarce; though I have lately seen it myself a very short distance north of the Tyne.

Mr. W. Backhouse found it at St. John's, Weardale, 800 feet above sea level (*Trans. Tyneside Nat. Field Club*, iv.), and Mr. J. Cullingford has had the nest recently from a cornfield close to the city of Durham.

29. Water Vole. *Microtus amphibius*, Linn.

Bell—*Arvicola amphibius*.

Common along all the streams.

30. Field Vole. *Microtus agrestis*, Linn.

Bell—*Arvicola agrestis*.

Very abundant. A quiet observer may often see it sitting at the entrance to its burrow in a hedge bank. Mr. V. A. Reppon records the killing of a black field vole in his park at Frosterley in 1889.

31. Bank Vole. *Evotomys glareolus*, Schreber.

Bell—*Arvicola glareolus*.

The bank vole is doubtless as common in the county of Durham as elsewhere; for

Mr. R. I. Pocock has shown (*Zoologist*, 1897) that its supposed scarcity was due to the fact that it is not to be trapped in the same way as the field vole. Before this became generally known the bank vole was sometimes recorded as a comparative rarity from the county. The Rev. H. H. Slater (*Zoologist*, 1887) had, however, found it to be by no means scarce in the eastern district.

32. Common Hare. *Lepus europæus*, Pallas.

Bell—*Lepus timidus*.

Hares are as numerous in many parts of the county as in other similar districts in England, though they seem to me to be hardly so abundant on the whole as in Yorkshire. They are naturally rather scarcer on the higher moorlands. Mr. R. Lofthouse mentions that they show a particular fondness for the reclaimed land about the estuary of the Tees.

33. Rabbit. *Lepus cuniculus*, Linn.

Very numerous in all suitable places.

## UNGULATA

34. White Park Cattle. *Bos taurus*, Linn.

Herds of white cattle, such as the one still maintained at Chillingham in Northumberland, were formerly kept at Bishop Auckland and Barnard Castle. A manuscript of the year 1635, quoted in the *Annals of Nat. Hist.* 1839, describes the park at Bishop Auckland as 'a daintie stately parke wherein were wild bulls and kine, wch had two calves runers; there are about twenty wild beasts, all white, will nott endure yo'r approach, butt if they bee enraged or distressed, verye violent and furious; their calves will bee wondrous fatt.' The Barnard Castle herd is alluded to by Mr. J. Watson in the *Naturalist* for 1887.

35. Red Deer. *Cervus elaphus*, Linn.

The former abundance of the red deer in the district is proved not only by old chronicles (e.g. Leland's *Itinerary*, quoted by Mennell and Perkins), but also by the numerous remains found in all parts of the county in peat bogs, river beds, caves and ancient camps. The descendants of the original wild red deer of

Weardale were maintained in the bishop's park at Stanhope until about 1640; in Teesdale they were preserved to a somewhat later date, for four hundred are recorded to have perished there in the snow in 1673 (Egglestone's *Stanhope*).

Well preserved antlers and bones of red deer from Hartlepool, Whitburn Cave, and the bed of the Tyne, amongst other places in the district, are in the Newcastle Museum.

36. Fallow Deer. *Cervus dama*, Linn.

This is an introduced species kept in some of the parks.

37. Roe Deer. *Capreolus capreolus*, Linn.

Bell—*Capreolus caprea*.

Apart from the known fact that the roe deer was once generally distributed in England, there is definite evidence of its former presence in the county of Durham. Its remains were found in the Heathery Burn Cave, near Stanhope, and in the Whitburn Cave on the coast. Bones from the Whitburn Cave are in the Newcastle Museum.

## CETACEA

38. Cachalot—Sperm Whale. *Physeter macrocephalus*, Linn.

Mennell and Perkins allude to the bones of a young cachalot deposited in the crypt of Durham Cathedral, and state that the animal

was 'stranded near Hartlepool and sent to the Bishop of Durham in the days when he claimed "Jura Regalia" within the limits of the See.' Canon Tristram informs me that some of the bones still remain, and that it was



## A HISTORY OF DURHAM

in the reign of Charles II. that the stranding of this whale occurred. The authors quoted above also record that 'the atlas of another individual of this species was recently found by Edward Backhouse, Esq., buried at some depth in the sand near Seaton.'

39. Bottle-Nosed or Beaked Whale. *Hyperoodon rostratus*, Chemnitz.

Bell—*Hyperoodon Butzkopf*.

A skeleton of this species was found in the bed of the Tyne near Newcastle in 1857, and is described in the *Transactions of the Tyneside Field Club*, iv. This is one of the commoner whales in British seas and has probably often visited the Durham coast. One was captured only just north of the Tyne about 1850.

40. White Whale—Beluga. *Delphinapterus leucas*, Pallas.

Bell—*Beluga leucas*.

This forms the most recent and perhaps the most interesting addition to the cetacean fauna of the county. A full grown male, fourteen feet in length, was captured at the South Shields sands on 10 June, 1903, and after a prolonged struggle was landed at North

Shields. Its skeleton is in the Newcastle Museum.

Full details and a photograph are given in the *Transactions* of the local natural history society<sup>1</sup> by Mr. A. Meek, M.Sc., who also reports the fact that since this capture another white whale, possibly the mate, has been seen at various points off the coast from Northumberland down to Flamborough Head. This is the first recorded occurrence of the species on the east coast south of the Forth.

41. Grampus. *Orca gladiator*, Lacépède.

Bell—*Phocæna orca*.

I know of no instance of the actual stranding of an individual of this species on the Durham coast, but it is by no means uncommon in the North Sea. I saw a grampus, or at least its unmistakable dorsal fin, on one occasion during the summer of 1901 a few miles off the coast. Sir Cuthbert Sharp<sup>2</sup> mentions the grampus in a list of local animals.

42. Porpoise. *Phocæna communis*, Cuvier.

Porpoises are abundant off the Durham coast.

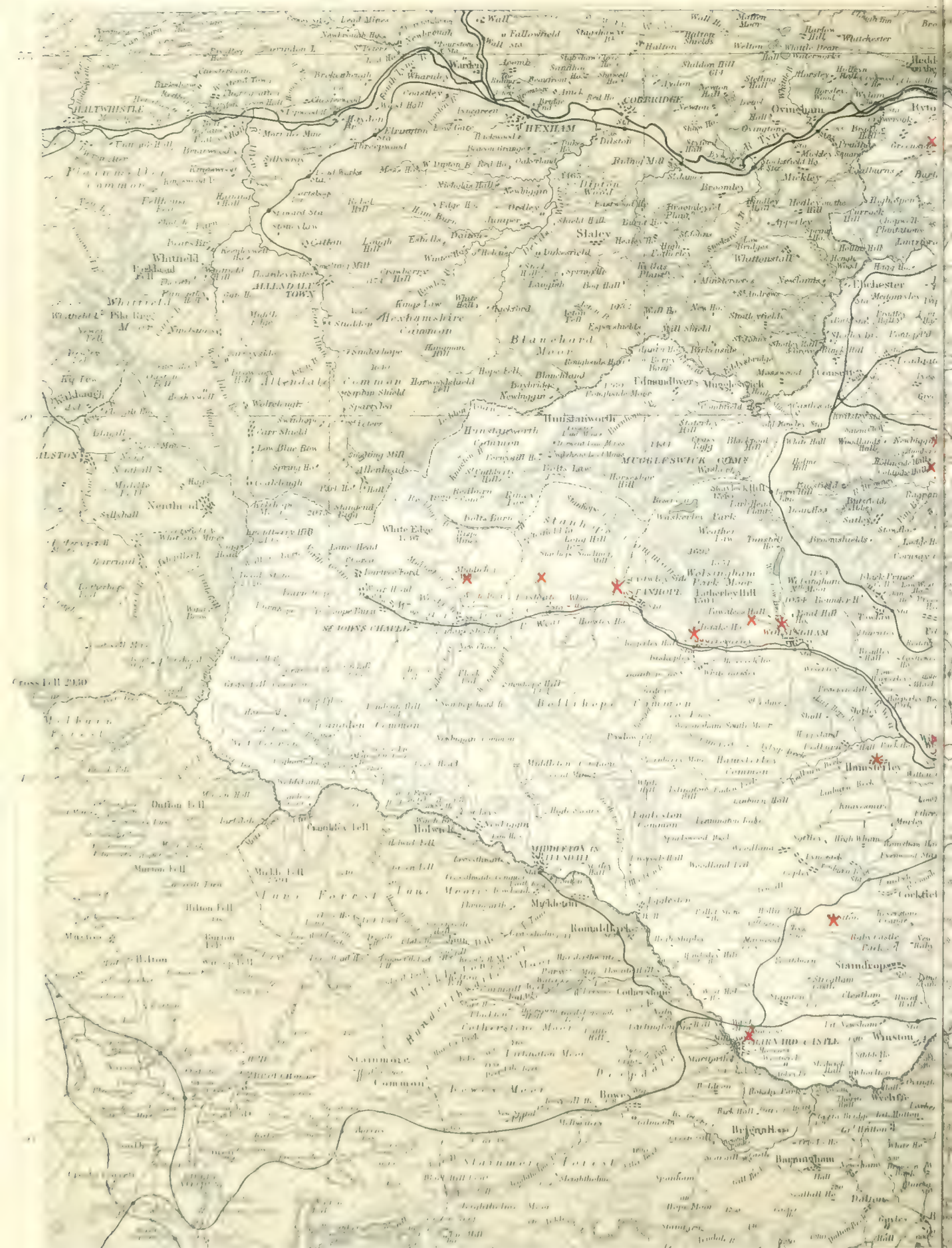
<sup>1</sup> *Trans. Nat. Hist. Soc. Northumb. and Durham* (new ser.), i.

<sup>2</sup> *History of Hartlepool*, 1816.











- 55







# EARLY MAN

THE rarity of prehistoric antiquities in the county of Durham is a circumstance to which more than one writer on the subject has called attention. The county of Durham, though it lies between districts which abound in the various remains of pre-Roman times, and though it presents natural features apparently well adapting it for early occupation, is markedly deficient in discoveries of weapons and implements of the stone and bronze ages, as it is also wanting in fortified sites and places of burial, of which latter only thirteen have been met with during the various operations of agricultural and other work.<sup>1</sup> No remains of the palæolithic age have been found within the county, though the bones of animals associated with that period have in a very few cases been discovered. Nothing has ever come to light to prove that man occupied any part of England as far north as Durham, or within a great distance south of it, in palæolithic times, and even at a very much later date, during the neolithic and bronze periods, everything goes to show that Durham was a sparsely-populated district. Nevertheless, some of the discoveries belonging to pre-Roman times, particularly two of the bronze age, are of the highest importance, and have furnished data of a very valuable kind.

## THE NEOLITHIC AGE

The various stone implements and other objects which may be referred to the neolithic age are not numerous, and many of them may belong to the bronze age. These remains consist of ground or polished axes made of basalt and other hard stone; axe-hammers of stone, quartzite hammer-stones, and arrowheads of flint, some beautifully formed and finished; and knives and scrapers of the same material. One scraper of flint, now in the British Museum, was associated with an interment at Copt Hill, Houghton le Spring; it was found in a cinerary urn, and probably belonged to the bronze age.

The following is a list of stone weapons and implements found in the county:—

DURHAM COUNTY.—Two ground axes, respectively  $7\frac{1}{4}$  inches and  $5\frac{1}{2}$  inches in length.

GAINFORD.—Perforated stone hammer. (*Proc. Soc. Antiq. Newcastle*, ser. iii. vol. ii. p. 74.)

HAMSTERLEY.—Many arrowheads, scrapers, flakes, etc., of flint.

HOLLY BUSH (parish of Lanchester).—Leaf-shape arrow-head of flint.

JARROW.—Two axes with surfaces entirely ground,  $7\frac{1}{4}$  inches and  $5\frac{1}{2}$  inches long respectively. (*Archæologia Eliana*, N.S. vol. v. p. 102; Evans, *Stone Impl.* 2nd ed. p. 101.)

LANCHESTER COMMON.—Arrow-head with square-ended barbs, now in the museum of the Soc. of Antiq. of Newcastle-upon-Tyne. (Evans, *Stone Impl.*, p. 383.)

MILNE HOUSE (near Frosterley).—Perforated hammer made of micaceous sandstone.

NEWTON KETTON.—Large numbers of flint arrow-heads and other flint implements.

QUEBEC.—Polished stone axe belonging to Rev. F. G. Wesley, Hamsterley.

RABY CASTLE.—Dark grey stone axe, ground, but of somewhat rough workmanship, nearly 7 inches in length. (Evans, *Stone Impl.* 2nd ed. p. 105.)

REDWORTH.—A large axe-hammer.

<sup>1</sup> Greenwell, *British Barrows*, p. 440.

## A HISTORY OF DURHAM

SHERBURN HOSPITAL.—Ground axe,  $5\frac{3}{4}$  inches long, oval in section and with conical butt, in the collection of Dr. Sturge.

STANLEY (parish of Brancepeth).—Well-made axe-hammer.

SUNDERLAND (in the river Wear, above the bridge).—Axe-hammer beautifully made, in the museum of the Society of Antiquaries of Newcastle-upon-Tyne.

SUNDERLAND (Millfield).—Large axe-hammer, perforated for handle, in the collection of Dr. Sturge. (Evans, *Stone Impl.* 2nd ed. p. 194.)

WEARDALE (Cowshill).—Ground basalt axe,  $9\frac{1}{2}$  inches long, in the collection of Dr. Sturge. (Evans, *Stone Impl.* 2nd ed. p. 106.)

WOLSINGHAM (Coves Houses).—A circular-perforated article of basalt,  $3\frac{1}{2}$  inches in diameter, in the collection of Dr. Sturge. (Evans, *Stone Impl.* 2nd ed. p. 229.)

The only burial-place which can be attributed to the neolithic period is a barrow at Copt Hill, Houghton le Spring. It appears to have originally been used for interments during the neolithic age. The original burials consist of burnt bodies, and the way in which they had been burnt and the manner of their deposit was of such a nature as to show they were of persons living in the neolithic age. Secondary burials of the bronze age were also found, one of which, that of a burnt body, was enclosed in a cinerary urn, accompanied by a flint scraper. Near the surface was an Anglian burial of an unburnt body in a cist of stone.

The association of this series of burials, quite distinct in time, is not probably to be accounted for by their having been of persons who were in any way connected, or of any sacredness or sentiment attached to the place. A mound had been thrown up as a memorial to people living in neolithic days, who were buried there. Sometime afterwards bronze-age folk dwelling in the locality had made use of an existing barrow for their own burials, and had enlarged and altered the shape of the original mound; and still later on, actuated by the same motives, Anglian settlers had utilised a conspicuous barrow as a convenient mode of making a monument for their own dead, without the labour of erecting one. Such a continuance of the use of a burial mound over different and distant times has occurred elsewhere.

### THE BRONZE AGE

The discovery of the uses of metal and the method of smelting and working it indicates the beginning of a new era of human culture. It is difficult to over-estimate the importance and value of this discovery. It must have meant for stone-using man an advance as great as the general use of steam or electricity in modern times.

One of the most interesting discoveries in Durham of articles belonging to this age was made before the year 1812. A hoard of bronze weapons and implements was found near Stanhope, in the valley of the Wear, in the western part of the county. An account of the discovery, written by the Rev. W. Wilson, rector of Wolsingham, and published by the Society of Antiquaries of Newcastle-upon-Tyne<sup>1</sup> in 1816, gives some interesting particulars and some rather amusing speculations as to the nature of the several components of the hoard. 'They were found,' writes the author 'by a labourer, upwards of four years ago, in the parish of Stanhope, in the county of Durham, under some large rough stones casually scattered upon the

<sup>1</sup> *Archæologia Æliana*, 4to. ser. i. 13-16.



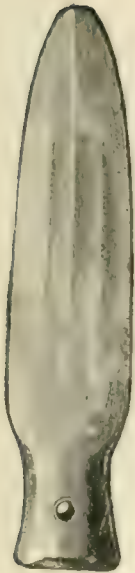
# EARLY MAN



GOLD ARMLET.



HOLLOW GOLD RING.



BRONZE SOCKETED KNIFE.



BRONZE SPEAR-HEAD.



BRONZE SOCKETED KNIFE.



BRONZE SOCKETED AXE.



BRONZE TANGED RAZOR.



HALF A CELT MOULD.

ARTICLES FOUND IN HEATHERY BURN CAVE.—I.



## A HISTORY OF DURHAM

declivity of a mountain, and covering nearly an acre of land. The place is at a little distance from the river Wear . . . They had probably been hidden there by some deserter, and, in my opinion, are the arms, etc., of a single Roman foot soldier, one of the velites, consisting of five spear-heads or hastæ, in sequences of different sizes, part of a sword, fragments of a pectorale or breast-plate, together with all the tools or accoutrements for repairing, sharpening, and burnishing these arms.'

There can be no doubt that this hoard was a deposit of the bronze age, none of the objects showing any trace of Roman influence. The sword, leaf-shape spear-heads with their rather pronounced midrib, socketed axes, gouge, and portions of what may be decorative discs worn on the breast, point, however, to the later part of that period, when the art of casting and elaborately finishing articles in bronze had reached its highest development. The whole find corresponds, to a great extent, with the articles found in Heathery Burn Cave, and the weapons, etc., are so similar in each case that they might have come from the same workshop.

The Heathery Burn Cave discovery is justly regarded as one of the most valuable finds of the bronze age ever made in Britain, and it requires a somewhat detailed description. The cave was situated a little more than a mile to the north of Stanhope, 800 feet above sea-level, and more than thirty miles distant from the coast. It opened out from the side of a ravine formed by Heathery Burn, a small affluent of Stanhope Burn, a tributary of the Wear. The floor of the cave was about 10 feet above the present level of the burn, which runs through a narrow and steep-sided gorge, clothed, as it probably always has been, with wood. The rock here is carboniferous or mountain limestone, and the cavern has evidently been formed by the chemical and physical action of water passing through a fissure in it.

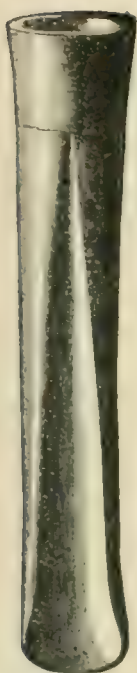
As long ago as 1843, when the entrance to the cave was destroyed in making a tramway, eight bronze rings were found. They were plain in character, of different sizes, and similar to other rings which have since been discovered in the cave. They are said to have been placed when found on a piece of bronze wire.

Further discoveries were made in 1859, and at various intervals between that year and 1872, but owing to the discontinuance of the quarrying at the spot nothing since then has been found. Before the place where the quarrying ceased was reached all signs of occupation had disappeared; nor is it likely that anything remains in that part of the cave which has not been explored. A good many accounts<sup>1</sup> of the cave and its remarkable contents have been published. The great importance of this discovery consists in the fact that the objects found in the cave constituted the whole equipment of a family of the bronze age. Everything which was in the dwelling-place when the occupants perished, probably by drowning, had remained there undisturbed on the floor under a layer of stalagmite until the time when the various relics were accidentally found.<sup>2</sup> More remarkable and valuable than the actual remains were the nature and circumstances of the discovery itself. Other sites have yielded bronze-age objects in greater numbers and of equally skilful workmanship,

<sup>1</sup> *Arch. liv.* 87-114; *Proc. Soc. Antiq. of Lond.* (2nd ser.), ii. 127 and v. 426; *Arch Journal*, xix. 358; *Geologist*, v. 34, 167; etc.

<sup>2</sup> *Guide to the Bronze Age Antiquities in the B.M.*

# EARLY MAN



SOCKETED GOUGE



BRONZE PIN.



BRONZE PIN.



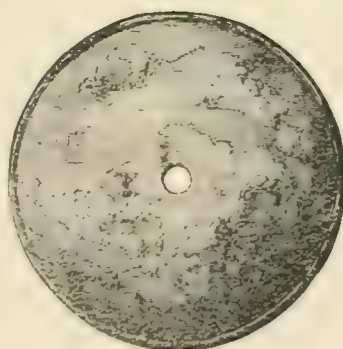
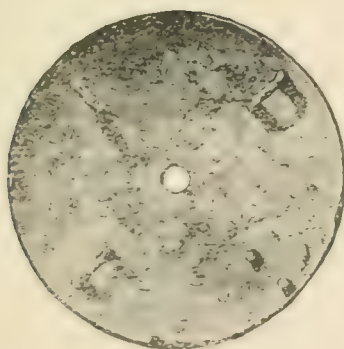
BRONZE ARMLET.



BRONZE ARMLET.



BRONZE BUTTON : FRONT AND BACK



BRONZE DISC : BACK AND FRONT.

ARTICLES FOUND IN HEATHERY BURN CAVE.—II.



## A HISTORY OF DURHAM

but in no other case has the entire personal property of a family at the moment when they were living and were dead been found.

With reference to the cave itself it may be explained that its main axis had a direction nearly north and south, and was, more or less, parallel to the ravine through which Heathery Burn finds its course. At the south end it came in contact with a vein of ironstone, which stopped its further extension in that direction. It then turned abruptly at a right angle to the east, and so continued for a distance of 65 feet, forming an eastern limb or extension which had an average width of about 12 feet.

The limestone floor of the cave had become covered with a deposit of gravel and sand which was not continuous over the entire floor, nor was it of uniform thickness, the average being about a foot. Above it was a bed of stalagmite varying in thickness from 3 to 6 inches. The height did not in any part exceed 10 feet, and in some parts it was much less. The width varied from 10 feet to 30 feet, but in one part it was only 2 feet.

The following list comprises the most important articles found in the cave:—

An armlet of gold of penannular form, with the ends slightly dilated, made by a narrow band of thin metal, with the edges turned over.

Penannular hollow ring of gold, skilfully made by joining two thin plates, one turned over the other at the outer edge. This, which is no doubt to some extent an ornamental object, has usually been found associated with armlets; its use is uncertain.

Bronze swords, two complete specimens, one of which is broken into three pieces, and a portion of a third; they are of the ordinary leaf-shape form, well cast and finished, with handle-plate and rivet-holes for the attachment of bone or wood to complete the handle.

Bronze spear-heads, eight or more in number, all of leaf-shape pattern, varying in length from 6 $\frac{5}{8}$  inches to 11 $\frac{1}{2}$  inches. They are very well made, and two are beautiful specimens of graceful form and good proportion, having a slight rib, which runs on each side parallel to the midrib, or socket-ridge, which forms a most tasteful addition to them.

Implements, as might be expected, are more numerous than weapons. They consist of several kinds, namely:—

Three knives, two of which have sockets with rivet holes, and a third a tang. One of the socketed knives is ornamented with six knobs, survivals, no doubt, of the heads of rivets. The tanged one shows signs of long-continued use on its whetted edges.

One bronze 'razor' with a tang, and the usual triangular-shaped notch with a small perforation beneath its point. This class of implement may have been used for cutting leather or hides rather than for shaving, but they more probably served as razors.

At least nineteen socketed axes, which varied in length from 3 $\frac{1}{8}$  inches to 4 inches. The larger proportion are decorated with three vertical ribs, a very common feature, which occurs in one of the axes in the Stanhope hoard. Others are quite plain; but one has an ornament now and then met with on socketed axes which suggests the survival of the curved wings of the flanged axe.

Half of a celt mould, a pair of tongs, a waste runner of bronze, and a piece of rough copper, found in the cave, afford sufficient evidence that these people made their own tools. Some of the axes were probably cast in the mould, of which one-half was found.

Two small bronze chisels, one socketed, the other having the opposite end pointed as if it were intended to be used as an awl or borer.

Three socketed gouges, or hollow chisels.

Fifteen or more bronze pins, of lengths varying from 2 $\frac{1}{4}$  inches to 5 $\frac{5}{8}$  inches.

Fourteen or more rings, in addition to the eight already mentioned as having been found in 1843. They are all quite plain, and of varying sizes and thickness.

Three bronze armlets, and a portion of a fourth. Two of them are penannular with expanding ends; the third, however, is of a quite different form, being made of a piece of thin wire doubled over with a loop in the middle, having the two ends of the wire so bent round as to clasp the loop.

Eight cylindrical hoops of thin bronze, probably armlets. They have been cast in one piece with great skill, and have on the inside a groove which corresponds to a raised rib running round the middle of the armlet outside. If they were armlets, of which there cannot be any doubt, they were probably worn on the upper part of the arm. They are certainly not, as has been suggested, the naves of chariot wheels.



# EARLY MAN



PERFORATED OBJECT OF DEER HORN.



OBJECT OF DEER HORN.



ARMLET OF LIGNITE.



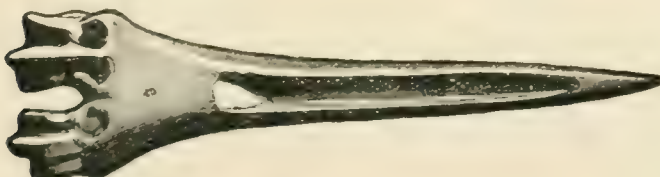
BONE SPINDLE-WHORL.



BONE IMPLEMENT.



BONE PIN.



BONE PIN.

ARTICLES FOUND IN HEATHERY BURN CAVE.—III.

## A HISTORY OF DURHAM

Six discs of bronze, four of which have a diameter of  $5\frac{3}{8}$  inches and two of  $5\frac{1}{4}$  inches, slightly convex, with a hole in the centre, a raised rounded moulding at the edge, and four loops at the back for attachment to some soft material. They are of rare occurrence, and probably formed ornamental adjuncts to a dress, and were worn as decorations for the breast, serving the same or a similar purpose, as the bronze plates found in the Stanhope hoard.

Two bronze buttons—one ornamented with nine concentric raised ribs on its face, and having five loops for attachment at the back; the other having a boss on the upper side and a loop on the under side.

One bronze finger ring (?) made out of a thin piece of wire, the ends of which, after having been flattened and widened, have been turned over, the one upon the other.

One bronze cauldron (18 inches high and  $14\frac{1}{2}$  inches wide at the mouth), made of three sheets of metal neatly riveted, and furnished with two massive handles and strengthening frame on the bottom. It had been used for cooking purposes, and when found had a deposit of carbon upon it.

There were various other objects of metal found above the stalagmite bed which had no relation to the bronze-age occupants of the cave; among them was a bronze key, probably Roman, and a penny of George II.

Implements of stone found in the cave comprise a thick flake of flint  $3\frac{1}{2}$  inches long, possibly used as a strike-a-light. Three other flakes of flint—one may have been used as a borer—were also found. There were also a well-shaped circular and perforated piece of limestone, perhaps a spindle-whorl, and two whetstones.

Ornaments of stone comprised four armlets of lignite, three of which were imperfect; two beads formed of stalagmite, a single bead of dark-coloured amber, a long bead of bone, and two small perforated water-rolled pebbles of stone. There was also a humble necklace of three sea-shells, viz., two periwinkles and a small whelk.

Bone and deer's horn implements were rather numerous. They comprised a long, narrow implement made of the leg-bone of a deer or some such animal, shaped like a modern paper-knife, of which a number were found. They may have been skinning knives, or perhaps implements used in weaving for driving back the woof in the manufacture of woven goods. There was also a knife made from the split and sharpened tusk of a boar. Bone pins in considerable number and one of lignite were found, of which at least twenty-three have been preserved. They have usually been manufactured out of the leg-bone of some small animal. There were also found three bone spindle-whorls, or they may have served as buttons; also three horse's and two dog's teeth pierced for suspension, and used as pendent ornaments.

Some enigmatical objects, made from tines and beams of the antlers of the red deer, were discovered. They are both straight and curved in form, five of them are pierced with three holes, of which the middle one is larger than those at the ends, and pierces the horn in a direction at right angles to them. Similar curved articles of deer's horn have been found in lake dwellings of the bronze age in Switzerland, and in the river Thames. The suggestion has been made that they have served as the cheek pieces of bridle bits, but this theory lacks proof. Several straight pieces of deer's antlers perforated at the middle were also found. In addition to the above there were other implements of bone, horn, etc., the precise use of which cannot be determined. There was no complete vessel of pottery found, but several small fragments were preserved. It had all been hand-made, and was principally unornamented, of a pale yellowish tinge with a tendency to red. Some bones, including three imperfect skulls, of the occupants of the cave, were recovered, and were examined by Professor Huxley and Mr. Carter Blake. They have unfortunately been lost.<sup>1</sup>

There were very numerous remains of animals in the form of bones, horns, tusks, teeth, etc. Many of the bones had, as usual, been broken in order that the marrow might be extracted.<sup>2</sup>

It is evident, judging from the large number and variety of objects found here, that this cave, damp, dark, and inconvenient as it must have been, was the dwelling place of several people for a considerable period. It may not have been the permanent living place of this family, but occupied only on special occasions and for some special purposes.

In addition to the discoveries in Heatherly Burn Cave, and the hoard of bronze weapons, etc., both in the parish of Stanhope, some other bronze-age antiquities have been found in various parts of the county.<sup>3</sup>

<sup>1</sup> *Geol. Mag.*, v. 204.

<sup>2</sup> There is a full account of this cave and its remarkable contents in *Arch.* vol. liv. 87-114.

<sup>3</sup> Thanks are due, and are hereby accorded, to Mr. Robert Blair, F.S.A., Dr. Sturge, and Mr. E. Wooller of Darlington for some of the information contained in this list.



DRINKING CUP FROM SACRISTON.



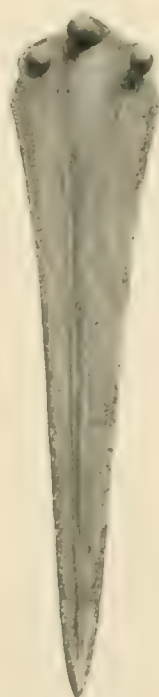
BRONZE RAPIER  
BLADE FROM  
RIVER TYNE AT  
NEWCASTLE.



BRONZE SWORD  
FROM RIVER TEES  
OPPOSITE  
MIDDLEBROUGH.



BRONZE RAPIER-  
BLADE FROM RIVER  
TYNE AT  
NEWCASTLE.



BRONZE DAGGER  
FROM  
RIVER TYNE  
ABOVE  
NEWCASTLE.



BRONZE SPEAR-HEAD  
FROM RIVER TYNE  
ABOVE NEWCASTLE.



BRONZE RAPIER-  
BLADE FROM RIVER  
WEAR AT  
CLAXHUGH.





## EARLY MAN

**BARNARD CASTLE.**—A sepulchral urn was found here which is now in the British Museum.

**BRANDON.**—Socketed axe.

**BROOMYHOLME.**—A circular bronze shield with central boss was discovered there, but the finder, who was unaware of its archæological value, in order to gratify his friends, cut it up like a cake and sent to each a slice. The greater part is preserved in the Museum of the Society of Antiquaries of Newcastle-upon-Tyne. It is of the usual type of the British shields of the time, the face covered with concentric, alternate bands of raised ribs and of rows of dots.

**CHESTER LE STREET.**—A bronze axe was found at this place and is now in the Museum of the Society of Antiquaries of Newcastle-upon-Tyne.

**DURHAM CITY.**—A flat copper celt which was found here is now in the British Museum. It is of the early type, and the composition of the metal, as shown by analysis by Professor Gowland, contains only a very slight proportion of tin.

**ESHWOOD NEAR FLASS.**—Flanged axe.

**FAWNLESS NEAR WOLSINGHAM.**—Flanged axe.

**HARTON.**—Socketed celt or axe-head, found on the Trow Rocks. It has one loop and longitudinal ribbed ornamentation. (Information from Mr. Robert Blair, F.S.A.)

**HOUGHTON LE SPRING, COPT HILL.**—An urn 13 inches high, containing burnt bones, and a flint scraper, found in a barrow, are now in the British Museum. The rim of the urn is decorated with oblique incised lines.

**HOWDEN-LE-WEAR.**—Looped palstave, now in the British Museum.

**HURBUCK, NEAR LANCHESTER.**—Two stone moulds for casting the plain flat axes were found here. They are both about the same size ( $7\frac{1}{2}$  inches by  $5\frac{1}{4}$  inches and 3 inches thick) and each contains the hollows for casting three axes, two on one face and one on the other. The largest axe would have been 6 inches long and  $4\frac{3}{4}$  inches wide at the cutting edge, the smallest  $2\frac{3}{4}$  inches long and  $1\frac{1}{4}$  inches wide.

**MEDOMSLEY.**—Leaf-shape bronze sword, accompanied by two rings used in connection with the belt. Several bronze articles were also found at another place near Medomsley.

**MORDEN CARR.**—Socketed axe.

**PIERCEBRIDGE.**—Flanged axe.

**SOUTH SHIELDS.**—A flint knife found with an unburnt body in a cist at the Trow Rocks, Westoe, near South Shields, is now in the British Museum.

**SUNDERLAND, HILTON (in river).**—Socketed axe.

**TEESDALE, HOLWICK.**—In the British Museum there are two jet beads approximately square in form, and ornamented with series of dots or short dashes arranged in parallel lines so as to occupy spaces of somewhat elongated lozenge shape.

**TRIMDON GRANGE, TRIMDON.**—Fragment of cinerary urn found in a barrow, and now preserved in the Greenwell Collection at the British Museum.

**RIVER TEES, OPPOSITE MIDDLESBROUGH.**—A leaf-shape sword with long slot in handle-plate and four rivet-holes for attachment to handle.

**RIVER TYNE, BELOW NEWCASTLE.**—An extremely fine bronze sword ( $27\frac{1}{2}$  inches long and  $1\frac{1}{4}$  inches wide), the broad tang or handle-plate being pierced with eight holes for securing the handle; now in the Greenwell Collection at Durham. A very similar sword, found in the Tyne at Newcastle, is now in the Museum of the Society of Antiquaries of Newcastle-on-Tyne.

**RIVER TYNE, KING'S MEADOWS, ABOVE NEWCASTLE.**—A socketed spear-head, with two lunate openings in the blade: also a massive dagger (13 inches long) with three rivets and two narrow ribs running the entire length, one on each side of the curved midrib.

**RIVER TYNE, NEWCASTLE.**—A beautifully shaped rapier blade ( $19\frac{1}{2}$  inches long), with pronounced narrow midrib, and two small nicks for attachment to the handle: also a well-shaped rapier blade ( $15\frac{1}{2}$  inches long). Two rivets in handle-plate.

**RIVER TYNE, ABOVE NEWCASTLE BRIDGE.**—Large spear-head.

**RIVER WEAR, NORTH SHORE, AT CLAXHEUGH, ABOVE SUNDERLAND.**—A rapier blade, with two rivet holes in the handle-plate.

## BARROWS AND OTHER SEPULCHRAL DEPOSITS

The prehistoric burials in the county of Durham, as is the case with the implements, weapons, and other traces of early man, appear to belong almost entirely to the age of bronze, but the burial mound at Copt Hill, Houghton le Spring, was originally a neolithic barrow, with secondary interments belonging to the bronze age introduced.

## A HISTORY OF DURHAM

- BRANDON.—An interment was discovered here in 1904. It was contained in a stone cist sunk beneath the surface, but with no mound over, and accompanied by a 'Drinking Cup.'
- HETTON.<sup>1</sup>—Formerly there was a cairn of stones here with a hollow on the top, from which circumstance apparently the mound received its popular name 'Fairies' Castle.' When the mound was removed, many years since, a vessel of pottery was found, which has not been preserved. The description seems to suggest that the barrow was of the bronze age.
- HOUGHTON LE SPRING.—At Copt Hill<sup>2</sup> there is now a round barrow, which was probably at first of a long form. In addition to the neolithic interments there were subsequent burials, one of which, a burnt body deposited in a cinerary urn with a flint implement, indicated a burial of the bronze age. There are also two or three barrows in the neighbourhood of Houghton le Spring.
- HUMBLETON HILL.—Three cinerary urns were found here during the work of enlarging the reservoir in 1879. One urn bears an uncommon ornament, a raised zig-zag band upon the overhanging rim. The urns are preserved in the museum at Sunderland.
- RYTON, BRADLEY HALL.<sup>3</sup>—A skeleton was found in a cist here under a large barrow. Another large barrow near Ryton Church remains unopened.
- SACRISTON.<sup>4</sup>—A cist burial was found here in 1888 which consisted of four slabs of stone set on edge and sunk beneath the surface of the ground, the cover, a larger stone, was on the level of the natural surface. The cist was 3 feet 10 inches long, 2 feet deep, 2 feet wide, and lay almost in a due east and west direction. Inside there were some much decayed unburnt bones and a vessel of pottery known as a 'Drinking Cup.' This vessel is 6 $\frac{3}{4}$  inches in height, 5 $\frac{1}{4}$  inches wide at the mouth, 5 $\frac{3}{4}$  inches at the middle, and 3 $\frac{5}{8}$  at the bottom. It has been hand-made without the assistance of the wheel, and bears a good deal of ornament in the form of horizontal lines, and bands filled with lines of dots arranged in alternating oblique rows. Towards the lower part of the vessel there are two bands made up of the same kind of dots arranged in rows which cross each other obliquely, producing a number of lozenge or quarry-shape spaces.
- SHERBURN.<sup>5</sup>—A short cist with an unburnt body.
- SOUTH SHIELDS.<sup>6</sup>—At the Trow Rocks, Westoe, South Shields, a barrow was found placed almost on the edge of the magnesian limestone cliff overhanging the sea. The barrow, which was 30 feet in diameter and 3 feet high, was constructed of earth with which some stones were intermixed. The cist, which consisted of six stones set on edge, two on each side and one at end, with two cover-stones, was placed in the centre of the barrow. It contained the much decayed skeleton of a man, some pieces of charcoal, and a flint knife formed of an outside flake, but carefully chipped along the two edges.
- STEEPLE HILL,<sup>7</sup> SITUATED ONE MILE FROM TUNSTALL.—In 1876 a cist interment was found here. The cist, constructed of four whinstone boulders, was 4 feet long, 2 $\frac{1}{2}$  feet wide, and slightly less than 2 $\frac{1}{2}$  feet deep. It had been sunk to some extent in a natural mound, to which soil had been added to increase its size. Within the cist was a skeleton of a man, past middle life, laid in a contracted position. The 'food vessels' had been deposited close to the chest of the man, and with them were found some few of the burnt bones of a child under twelve years of age. One of the urns or food vessels was 5 $\frac{1}{4}$  inches high and the other was 4 $\frac{3}{4}$  inches high. Both are ornamented on the outside. A second skeleton, that of a woman past middle life, was found about three feet to the west of the cist. Round the body some stones had been placed, but not in regular order as in the case of the cist.
- STONE BRIDGE NEAR DURHAM.—About five years ago two cinerary urns containing burnt bones were found in this neighbourhood. There was no barrow. They are somewhat roughly made, but of the ordinary form and ornamentation. There was also an 'incense cup.'
- TUNSTALL HILL.<sup>8</sup>—In 1814 some urns believed to be of the bronze age, and accompanied by or containing burnt bones, were found at this place, a hill near Sunderland.

From the particulars given above, it seems probable that the county of Durham was inhabited throughout all the time covered by the bronze age, as objects representative of this period from its beginning to its close have been found; the occupation appears to have been partial, and the population small.

<sup>1</sup> *Trans. of the Archit. and Arch. Soc. of Durham and Northumb.* iii. 184, and Surtees, *Hist. of Durham.*

<sup>2</sup> *Trans. of the Archit. and Arch. Soc. of Durham and Northumb.* iii. 184.

<sup>3</sup> *British Barrows*, p. 442.

<sup>4</sup> *Trans. Archit. and Arch. Soc. of Durham.* iii. 186.

<sup>5</sup> *British Barrows*, p. 442.

<sup>6</sup> *Op. cit.* p. 442. Grave No. ccxv.

<sup>7</sup> *Op. cit.* pp. 441-2.

<sup>8</sup> *Op. cit.* p. 440.

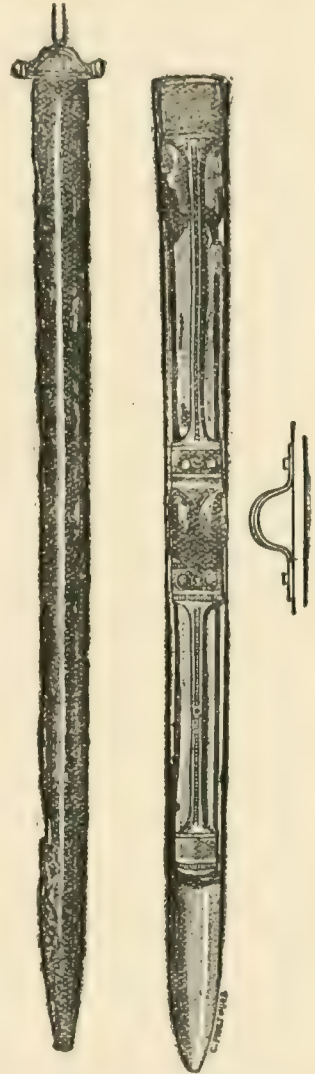


# EARLY MAN

## THE PREHISTORIC IRON AGE

The data for the construction of the story of the county of Durham during this interesting period is extremely limited. There is, in fact, only one discovery made in the county which can with certainty be referred to that time. This is an iron sword in its bronze scabbard which was found by some masons engaged in repairing a bridge about the year 1880 at Barmston, near Sadberge.<sup>1</sup>

Both the sword and its scabbard are now in the British Museum. The sword blade, which is of iron, measures 1 foot 9 inches exclusive of the tang, and making no allowance for the point of the blade, which is somewhat defective. A solid bronze guard-like termination still remains at the upper end of the blade, pierced in order that the iron tang, now partly broken off, might pass through it. The blade is straight, and possesses two sharp edges and a well developed mid-rib. The bronze sheath, or scabbard, is handsomely shaped and ornamented with a late Celtic pattern. Like most examples of its class it presents features which show originality or novelty, whilst on the other hand it has characteristics which are common to the whole group to which it belongs. The sheath is 1 foot 9½ inches in length, and is provided with a bold, semi-circular loop for the strap not far from the middle of the ornamental side. This loop for suspension is the main feature of the sheath and the cause of its ornamental additions. The accompanying engravings will show how the artist in bronze has continued the idea of the loop in the form of ornamental straps or ribs extending in both directions and ending, in both cases, in a kind of square, flat plate. The result is a fine piece of decorative outline rather than ornament in minute detail.



LATE-CELTIC SWORD AND SHEATH  
FOUND AT BARMSTON NEARSADBERGE  
CO. DURHAM. (½ linear.)

## ANCIENT BRITISH COIN

The only ancient British coin recorded by Sir John Evans as having been found in the county of Durham is one of Tasciovanus struck at Verulam, and inscribed VER, discovered in the Roman camp at South Shields.<sup>2</sup> Sir John Evans points out that the principal interest of the coin arises from its having been found so far away from the territory of Tasciovanus.

<sup>1</sup> The circumstances of the discovery, as far as they are known, and as here given, have been recorded by Mr. Charles H. Read, F.S.A. in the *Proc. Soc. Antiq.* 21 Nov. 1895 (2nd Ser. xvi. pp. 4-7).

<sup>2</sup> *Ancient British Coins*, p. 549.

















# ANGLO-SAXON REMAINS

WITH the exception of sculptured memorial crosses of standing form, and recumbent grave-covers, complete or in a fragmentary condition, the remains indicating the state of the arts and cultivation in the present county of Durham during the post-Roman and the pre-Norman periods, are exceedingly meagre. Of glass vessels only one is available for description, and bronze ornaments for personal use are very scarce. Again, in the matter of weapons, with the exception of the valuable hoard from Hurbuck, there are few to be mentioned. Cemeteries have been found at Hartlepool and Monkwearmouth directly connected with churches, and at Darlington where no such connection is apparent, while single burials that may indicate sites of cemeteries have been brought to light at Castle Eden and Heworth,<sup>1</sup> which also were probably connected with churches.

The discovery at Darlington, perhaps the most important, was made in 1876, by Mr. Haxby Dougill, a builder of that town, when making excavations for a sewer, to be laid between Dodd Street and Selborne Terrace on the Greenbank estate, which lies to the north of the parish church. The importance of the find was fortunately realized by a local antiquary, Mr. J. T. Abbott,<sup>2</sup> who made observations on the site, and collected a number of objects found associated with the burials. About a dozen skeletons of males, females, and children were found, and, at the head of each, was a small urn, of burnt clay. The bodies had been laid with the feet to the east. Among the articles accompanying them were a number of brooches, of various sizes, some of which showed traces of gilding; two circular brooches; a pair of tweezers; a number of broken brooches and pins; and two large cruciform brooches,<sup>3</sup> all of bronze; also a necklace composed of amber, glass, and stone beads, and a chalk object, no doubt a spindle whorl, which may have been round the neck of one of the persons interred. The weapons found were iron swords and spear-heads, and two or more iron bosses of shields. The period to which these articles point is that of the very early Anglian occupation, possibly before the introduction of Christianity into Northumbria. Three spear-heads preserved measure respectively 10½ inches, 12½ inches, and 16 inches in length. They are of the early Anglo-Saxon form, the sockets being split up to show part of the shaft. The three spear-heads and a fibula are in the possession of Mr. Edward Wooler of Darlington, the shield bosses are in that of Canon Greenwell of Durham, and some other objects are in the collection of Sir John Evans.

<sup>1</sup> The rock burial at East Boldon to be referred to below may be mentioned in this connection.

<sup>2</sup> Mr. Abbott contributed an account of the find to the *North-Eastern Independent* of Saturday, 1 February, 1879.

<sup>3</sup> Five similar examples are figured on Plate V. of *The Industrial Arts of the Anglo-Saxons*, De Baye.

## A HISTORY OF DURHAM

The cemetery at Hartlepool was discovered in July, 1833, during excavations in a field called Cross Close, about 150 yards south-east of the ancient church of St. Hilda, and was possibly connected with the nunnery over which that saint presided about the middle of the seventh century.<sup>1</sup> It is a misfortune that no accurate observations were made at the time of the discovery by any competent archæologist, as many of the stones accompanying the burials were dispersed and destroyed before their unusual and interesting character was noticed. Several skeletons were found buried at a depth of of about  $3\frac{1}{2}$  feet and lying on the limestone rock. They were laid north and south with their heads resting on small, square flat stones (hence called pillow-stones); while above the skeletons were other stones of a memorial character. Of these, only seven complete stones have been preserved; the number originally found is unknown. Four of them are in the British Museum, two in the museum of the Society of Antiquaries of Newcastle-upon-Tyne, and one is in the Cathedral Library at Durham. They are all of rectangular form and vary in size, the greatest length being only  $11\frac{1}{2}$  inches. Some fragments of another stone of circular form,  $13\frac{1}{2}$  inches in diameter, were found. When complete this stone had contained, in incised lines, an elegant cross, with circular boss in the centre, and circular terminations to the four arms. A border of lines and sunk circles surrounded the stone, and the remaining fragments contained most of the letters forming the words *REQUIESCAT IN PACE*. The letters are of the Saxon form, the square c being used.

In referring to these stones, it will be convenient to number them as in Dr. Haigh's list.<sup>2</sup> Nos. 3, 5, 7 and 8 are in the British Museum. No. 3 is  $7\frac{1}{2}$  inches by  $5\frac{1}{2}$  inches, and shows a raised cross and border formed by sinking the field. The cross has semicircular terminations, or half bosses, at the extremities of the limbs, and a boss at the intersection. Across the lower part the letters *EDILUINI* in Saxon minuscules are incised. No. 5 is  $8\frac{1}{2}$  inches by 7 inches, and has also a raised cross and border formed in the same manner. The cross is of a very unusual form; its limbs terminate in steps of two degrees on either side each limb, and the centre boss is of the lozenge form stepped into four degrees in each angle. On the field is incised an inscription in five lines in minuscules, *ORATE PRO EDILUINI ORATE PRO UERMUND ET TORTHUID*, which is remarkable, as it repeats the names which occur singly on three other stones. No. 7 is 8 inches by  $7\frac{3}{4}$  inches, and has again the characteristic type of cross, but formed by incised lines only, with the name *HANEGNEVB* also incised; the letters are uncial with the exception of the g, which is minuscule. No. 8 is  $10\frac{3}{4}$  inches by  $8\frac{3}{4}$  inches, and has an elegant cross formed of broad double and treble incised lines, the arms ending in circles with outer circles and curious scroll terminations. The surface is unfortunately damaged, but retains the letters . . . *OGUID* in minuscules. The two fragments of the circular stone, and No. 1 on Dr. Haigh's list are lost.

The two rectangular stones preserved at Newcastle (2 and 4) have each a cross of the same form, in one case in relief, in the other incised. The

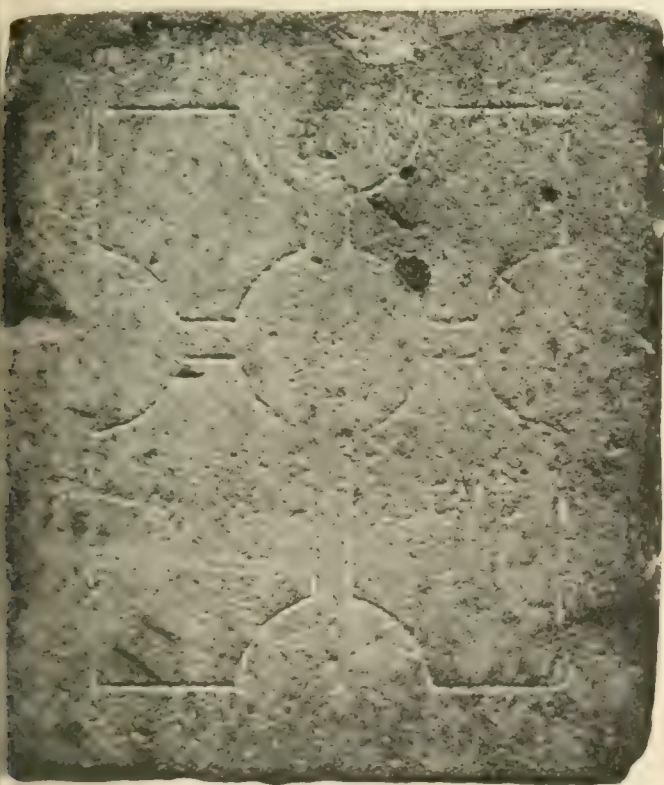
<sup>1</sup> The fact that the bodies were laid north and south, it has been argued, is against the suggestion that they were the remains of Christians.

<sup>2</sup> *Brit. Arch. Assoc. Journ.* i. 185-196. *Arch.* xxvi. 497, pl. lii.





HARTLEPOOL : GRAVESTONE No. 3.



HARTLEPOOL : GRAVESTONE No. 7.



HARTLEPOOL : GRAVESTONE No. 8.





## ANGLO-SAXON REMAINS

inscription on the former is, in Saxon letters, *ORA PRO VERMVND TORHTSVID*, and that on the latter, in runes, the female name *HILDDIGYTH*.<sup>1</sup> The stone at Durham (6) has also a cross in incised lines. In the upper part are the letters Alpha and Omega, and below is the name *BERCHTGYÐ* in minuscule characters.

Further discoveries were made in the year 1838 and also in 1843, when some pieces of coloured glass and a bone needle were found.

A curious object which accompanied one of the interments is in the possession of the Rev. Canon Greenwell. It is composed of hard limestone, and is in the form of the small mortars used for pounding drugs. It measures  $7\frac{5}{8}$  inches in length and 5 inches in width, and  $4\frac{5}{8}$  inches in height. The interior is  $3\frac{5}{8}$  inches in diameter, and on one side is a sinking in the rim, no doubt for the purpose of guiding the passage of the contents when reduced to a powder. Its general appearance is that of the 'creeing trough' of later periods.

The only relic of the cemetery at Monkwearmouth which has been discovered is the small stone, now in the British Museum, bearing upon it the name *TIDFIRTH*,<sup>2</sup> in runes. This was found in 1834 at a great depth, about 20 feet from the south side of the ancient church of St. Peter, and within the area of what is called the Manor House, where, probably, was the cemetery connected with Biscop's Monastery. Tidfirth was the last bishop of Hexham, and was deposed about the year 821. The occurrence of the stone with his name at Monkwearmouth has been thought to imply that he was on a journey, possibly to Rome, and having died before his intended embarkation, was buried there.

Among the bronze ornaments of this period is a curious brooch or buckle preserved in the museum of the Society of Antiquaries of Newcastle-upon-Tyne and found probably about the beginning of the nineteenth century (the date has not been recorded), associated with a burial in a rock tomb at East Boldon, near Sunderland, and was presented to the society by the late Rev. G. C. Abbes of Cleadon. It is ornamented with three small circular bosses of gold to enclose polished garnets, one of which is wanting.

The most important series of weapons of this period in the county came to light in the year 1870, on the farm at Hurbuck, near Lanchester. They were noticed by the late David Balleny, the owner of the farm, when fishing in the Smallhope Burn, 2 miles west of Lanchester.<sup>3</sup> The hoard comprised two swords, four scythes, two tools, one of which resembles a gouge, two buckles or brooches, without pins, eight axes of different forms, several of them being of the francisca type, and the pointed butt of a spear shaft, which is slit up for half its length and retains the rivet which secured it to the shaft. Of the above articles seventeen are in the possession of Mr. Edmund Balleny of Little Greencroft, and two axes in that of Canon Greenwell of Durham. The late Dr. Edward Charlton, of Newcastle, procured from the hoard one scythe and one axe, the present location of which is unknown. The two swords are in very different states of preservation; the more perfect is an example of the long iron sword or *spatha*, and is 2 feet 11 inches long. The blade is double edged, 2 inches wide at the guard,

<sup>1</sup> *Brit. Arch. Assoc. Journ.* i. 185-196.

<sup>2</sup> *The Priory of Hexham* (Surtees Soc.), vol. 44, introd. p. xl., and *Arch. Æliana*, vi. 196.

<sup>3</sup> *Arch. Journ.* xviii. 67.

## A HISTORY OF DURHAM

and 1 inch at the tip. It is entirely of iron and a solid forging, and very closely resembles a sword found at Canwick Common, near Lincoln.<sup>1</sup> The guard is of the curved form, the hilt 3 inches long, and the pommel has a curved base, the knob being solid and heavy in order to counterbalance the weight of the blade. The attenuated form of the handle indicates that it was furnished with a leather wrapping or wooden mount. The other sword is now 28 inches in length, and is much corroded. It has been very highly finished, and some portions of its polished surface retain considerable traces of inlaying with gold. All indications of the guard, the hilt, and the pommel are gone, and it is not unlikely that its original length was as much as 3 feet.

The scythes average 15 inches in length with blades  $1\frac{3}{4}$  inches in width. They have tangs at right angles to the blades, one of which is 4 inches long, with which they were attached to whatever form of handle was used to wield them. Two rings are possibly the remains of harness buckles. The larger one is circular,  $3\frac{1}{2}$  inches in diameter, the ends overlap, and are welded together with a strap, very rudely attached. The smaller one is of rectangular form,  $3\frac{1}{2}$  inches by 2 inches. The two objects for which it is most difficult to suggest a use are two bars, respectively 18 inches and 13 inches in length; the longer one has a circular section and is pointed at both ends, a long tapering point at one end and a blunt point at the other. Its general appearance is that of a modern crowbar. The shorter tool has also a circular section for the greater portion of its length,  $\frac{5}{8}$  inch in diameter; one end is widened out to the extent of an inch and flattened, the other is also expanded to an inch in width, and resembles a rudely-formed spoon. It may have been used as a gouge for shaping timber.

The eight axes are of special interest. They vary in form; some of them being of the Saxon<sup>2</sup> type, others resemble the francisca. The blade of the largest axe is of the former kind, and is 10 inches in length from the outside of the socket to the cutting edge of the blade. This is expanded and measures 12 inches from one point to the other, with an average width of an inch. The neck connecting the socket with the blade is  $\frac{3}{4}$  inch wide, and has an average thickness of  $\frac{3}{8}$  inch. The socket measures  $1\frac{3}{4}$  inches width and depth, and is perforated to accommodate a shaft, of the usual oval form, 2 inches by 1 inch. Two smaller axes of the same form measure respectively  $5\frac{1}{2}$  and 6 inches in total length. Another, of the francisca type, is 8 inches in length, and  $2\frac{1}{2}$  inches wide on the cutting edge. Two others are of a similar form.

The last object to be described exactly resembles a miner's pick of the present day, and was, no doubt, used for similar purposes. It is  $10\frac{1}{2}$  inches long, pointed at both ends, and perforated in the centre to accommodate a shaft 2 inches by 1 inch. Viewed from the side, it is fashioned to a curve of about 1 foot in radius; while at the centre, the socket is expanded to a depth of  $1\frac{1}{2}$  inches.

Of the two axes in Canon Greenwell's possession, one is of the Saxon type, and is  $9\frac{1}{2}$  inches long from the extremity of the socket to the edge of

<sup>1</sup> *Scotl. England*, i. 259. Notes to Illus. p. xxi.

<sup>2</sup> Richard F. Burton, *The Book of the Sword*, p. 94, fig. 98; Kemble, *Horæ Ferales*, pl. 26 and 27, pp. 257-258. *Altenham's Pagan Saxondom*, pl. xxiii.; *Inventarium Sepulchrale* passim, Lindenschmit *Alterthümer*, vol. ii. heft iii. tof. 2; Lindenschmit, *Handbuch*, pt. i. 192-3; Demmin, *Arms and Armour*, 155.

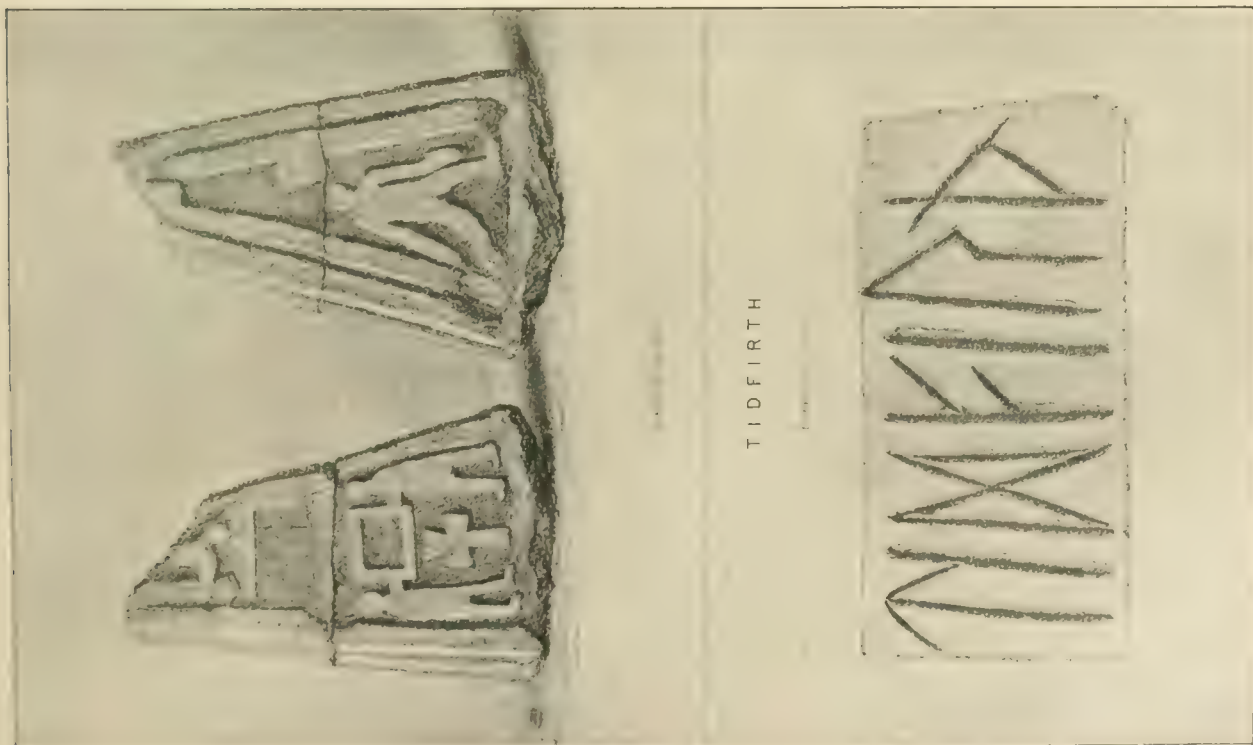




IRON WEAPONS FOUND AT HURBECK, NEAR LANCASTER.

(The axe shown at the top right-hand corner is of larger scale than that of the other weapons. The dimensions are given on pp. 213, 214.)





TIDFIRTH

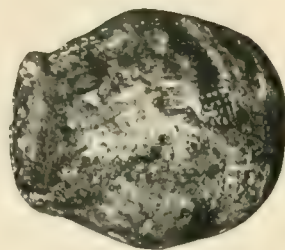
BISHOP TIDFIRTH'S STONE FROM MONKWEARMOUTH.



THREE SPEAR-HEADS FROM  
DARLINGTON (1).



ANGELIAN BROOCH FROM  
DARLINGTON (1).



EARTHENWARE VESSEL CONTAINING  
COINS FROM HIFWORTH (1).



BROOCH OR BUCKLE FROM  
EAST BOLDON (1).





## ANGLO-SAXON REMAINS

the blade. The blade measures 12 inches in length. The axe of the francisca form is  $5\frac{1}{4}$  inches long and  $3\frac{1}{2}$  inches wide at the cutting edge, this being set at an angle of 21 degrees to the axial line. Remains of the wooden handle are in the socket.

In the excavation that was undertaken on the site of the destroyed portion of the Chapter House at Durham in 1874, an iron spear-head, coated with gold, was found in association with one of the burials at a lower level than that at which the bishops were interred. It therefore belonged to an interment of the period between 995 and 1083. Such a spear was a common accompaniment of a male burial of the period. It measures 7 inches in length and  $1\frac{5}{8}$  inches in width. The socket is 1 inch in diameter, and retains the rivets and a part of the shaft. It is preserved in the Cathedral Library, Durham.

Only one glass vessel of the Anglo-Saxon period is known to have been found in the county. It is of singular interest and beauty, and was discovered in 1775 at Castle Eden by some workmen employed in uprooting a hedge about 100 yards from the bridge which spans the burn dividing the church from the castle. It was associated with a burial, and the contemporary description of the find states that 'The mouth of the vase was applied to a human skull, so near the surface, as to leave the bottom of the vase exposed in the gutter of the hedge, the body had been deposited horizontally with the head towards the east and had been covered with a heap of common field stones. The labourer represented the skull and bones as appearing entire; but he was prevented by the clergyman of Castle Eden from making any further research. The ground was, however, again opened soon after by Mr. Burdon's directions; and a cavity was discovered beneath the cairn, or heap of stones, large enough to contain a body of ordinary dimensions, with a quantity of deep coloured soil, the remains probably of the bones which had mouldered on the admission of the air. The vase was full of earth, and, when emptied, appeared to retain a subtle, aromatic smell.' It may be added that the place of discovery is almost exactly opposite the spot where the grant of William de Thorp fixes the cemetery of the ancient chapel of St. James in the twelfth century: 'Costera sub cemeterio.'

This glass cup, which belongs to a well-known type, is quite isolated in the north of England and deserves more than a passing notice. It is in excellent preservation, and its blue colour is somewhat exceptional, glass of the period being generally of an amber yellow or an olive green. Several examples are included in the national collection, but it is very seldom that a specimen is found entire. Continental examples from the Rhine valley and Normandy have long been known, and it would be unwise to claim an exclusive Anglo-Saxon origin for them, though many have been found in Kent and our southern counties, and fragments have been obtained as far north as Northants.<sup>1</sup> Of itself the Durham specimen proves nothing as to the tribal connections of the inhabitants during the sixth and seventh centuries, as it might easily have been obtained by commerce, or in a raid on the south; but it should always be borne in mind that the so-called Anglian cinerary urns practically cease at the Yorkshire border. It would be interesting, however, to derive some clue as to the earliest Anglo-Saxon occupants of what is now Durham from the contents of the graves. In this connection it may be noticed that though at Darlington

<sup>1</sup> *V. C. H. Northants*, i. 244.

## A HISTORY OF DURHAM

the skeletons lay with their feet at the east end of the grave, obviously Christian interments in the cemetery of Hartlepool nunnery were north and south. The presence of weapons and grave furniture in the former case seeming to imply that the east-and-west burials at Darlington were not those of Christian converts. Orientation may eventually prove of importance in determining the date and character of Anglo-Saxon burials.

A curious coincidence should be mentioned in connection with a barrow (grave-mound) at Cambois, Northumberland. With a burial were found an enamelled bronze brooch and part of a bone comb,<sup>1</sup> which can be approximately dated. Many combs of this kind, with a stout handle tapering to the head of the comb, and one row of teeth, are to be seen in the York Museum, and can be assigned with little hesitation to the Danish period. Apart from this association it would be difficult to place the brooch, which has a flat circular centre enclosing a bird, apparently with a branch in its beak, the ground being filled with blue, green, and white enamel of the *champlevé* kind. Round the centre, but on a lower level, is a band of embossed work, probably meant for running-scrolls. Another, modelled perhaps from the same original, but further from the prototype, and somewhat debased and smaller was probably found on the site of Hyde Abbey, near Winchester, well-known as the burial place of Alfred. The enamel colours are somewhat indistinct, but the design is the same, and the diameter is about  $1\frac{3}{4}$  inches.<sup>2</sup> That these two enamelled brooches were of Danish manufacture is not probable, and they may be English work, or have come from Gaul or the Rhine district, where the bird was in use as a Christian symbol.

The only hoard of coins of this period which has been discovered in the county was a small one of about a dozen pieces, found while digging a grave in the burial ground attached to the chapel at Heworth, near Gateshead, about the year 1822. They were contained in a curiously shaped vessel of coarse earthenware, poorly glazed,  $2\frac{1}{2}$  inches high and  $2\frac{1}{2}$  inches in diameter in its widest part. The mouth measures  $1\frac{3}{8}$  inches by 1 inch inside, and is formed into a rudely formed lip. Opposite to the lip a broken patch seems to indicate that the vessel was originally supplied with a handle in the form of a hook. It may be generally described as somewhat resembling a small cream jug. In two places blackened patches show that it had been in contact with fire. The coins are of bronze, of the type known as *stycas*, and are all of the reign of Ecgfrith (670–685). On the obverse they bear the letters, + ECGFRID REX, and on the reverse the single word LVX; interspersed with these three letters are a number of radiating lines which may represent the rays of the sun. The Rev. John Hodgson,<sup>3</sup> in exhibiting one of the coins at a meeting of the Society of Antiquaries of Newcastle-upon-Tyne, conjectured that the motto LVX was either complimentary to the character of Ecgfrith, or as an allusion to the flourishing state of Christianity during his reign.

Mr. Longstaffe mentions four silver pennies of Alfred's time, found at Gainford about 1865.<sup>4</sup> They were then in the possession of the Rev. J. Edleston, and were discovered together outside the north-west angle of the chancel of Gainford church.

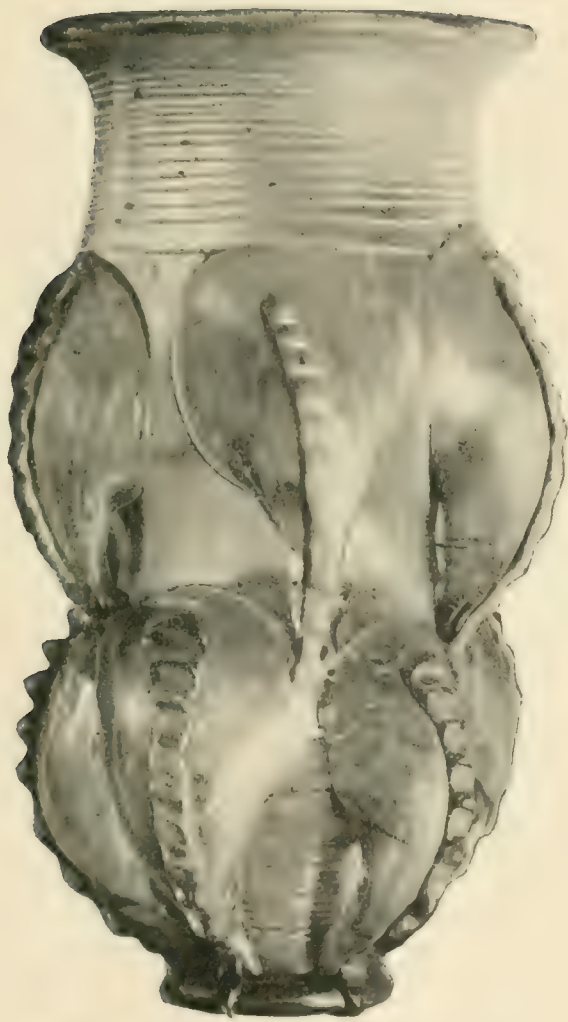
<sup>1</sup> Both are in the British Museum.

<sup>2</sup> *Arch. Æliana*, i. 124, pl. vi.

<sup>3</sup> *V. C. H. Hants*, i. 397.

<sup>4</sup> *Ibid.* vi. 233–4.





GLASS VESSEL FOUND AT CASTLE EDEN IN 1775.



# ANGLO-SAXON REMAINS

## SCULPTURED STONES

The county of Durham contains a very large number of architectural and sculptured remains of the period. In this section, only the sculptured stones which are of a memorial character will be dealt with. Those which are clearly architectural details will be referred to in the section on architecture. The art of the memorial stones may be said to be entirely of Christian character. The earlier examples are the more beautiful, and distinctly of the Anglian school; while the later are manifestly inferior both in design and execution. Dealing in detail with the various stones it will be convenient to adopt a topographical and alphabetical arrangement.

*Auckland.*—In the church of St. Andrew, commonly called South Church, is a very interesting collection, nearly the whole of which was taken out of the walls of the south transept at the time it was rebuilt in 1881. The existence of these stones in the walls of this part of the church is a fact of some interest, as the transept was an extension of an earlier building, and was built upon a portion of the ancient burial-ground on the south of the older church. The crosses, therefore, were probably *in situ* when the extension was made, and were broken up and used in the walls as building material.

Five of the fragments belong, apparently, to the same memorial, and may conveniently be described together. They consist of a portion of the pedestal or base-stone which carried the shaft and cross, the latter being represented by three other pieces. The base was apparently split up into eight portions for use as walling stones. Of these, three remain, and show the width and height of the original. There is considerable ‘batter’ on all four sides, and a triple bead-moulding is carried round the upper angles and down the sides to the termination of the figure subjects. The side which is most perfect contains three nimbed figures, the centre one of which has a book in the left hand, with the right hand raised and the two first fingers pointing towards the figure on the left. Of the two outer figures one has the right hand raised, and the other the left, the open hand points to the central figure.<sup>1</sup> Portions of two of the returned faces remain, each containing the greater part of a nimbed figure.

The two pieces of the shaft of the cross show that it was one of great interest and beauty, and has higher artistic merits than any other example of like work in the county. A small portion of the bottom of one of the sides, when compared in its width with the much larger fragment, indicates that the shaft was a lofty one and that the greater part of it is wanting. This comparison, assisted by the arrangement of the sculpture on the Bewcastle cross, shows pretty clearly that the larger fragment came from near the top of the shaft. The front and back of the shaft have pictorial subjects in panels, the upper of which in each case is almost entire and has a semicircular head. Each contains two figures, of which one holds in his hand a sceptre tipped with three balls; another, in the other picture, a scroll rolled up. The drapery of the figures represented with raised hands, flows over the arm in easy folds, while the vestment in another case is enriched with bands

<sup>1</sup> The Rev. J. F. Hodgson conjectures that the scene is one of the later events in the life of our Lord. *Arch. Æliana*, xx. 30.



## A HISTORY OF DURHAM

containing lines of raised pellets. Below are portions of two other subjects. One of these is a Crucifixion with three nimbed figures having curled hair like that of the evangelists in the Lindisfarne Gospels, and of David in the Durham Cassiodorus.<sup>1</sup> This is important as suggesting that this memorial is probably as early as c. 700. In any case it seems to belong to the very best period of Anglo-Saxon sculpture. Over the head of the figure of our Lord is a square panel with the letters  $\text{P A S}$ , an abbreviation of 'passus est,' the final letter being of the Greek form as used in the pictures of the evangelists in the Lindisfarne Gospels. The angles are treated with the usual triple bead, the outer bead being worked into a cable moulding.<sup>2</sup> These beads are carried across the shaft as divisions between the subjects. Both sides are ornamented with a very finely sculptured rolling scroll, similar to those on the stones at Jarrow, Jedburgh, Bewcastle, Ruthwell, Easby and elsewhere. The whorls enclose animals and birds, which are represented in all cases as eating the fruit which forms the terminations of the various stems. At the lower termination on one side is the upper part of a human figure, the upraised hands of which hold a bow and arrow, pointed at one of the animals. The small fragment which formed the foot of one of the sides has upon it the commencement of a scroll of that peculiar expanded form which occurs at Bewcastle and Ruthwell. Standing upon this is a figure represented as ascending, only the feet and legs of which remain.

Another stone is an almost perfect example of a horizontal grave-cover, or possibly a headstone. It is a rectangular slab 2 feet 6 inches by 1 foot 8½ inches, and has upon it a cross, the head of which is of the square patée form. At the intersection of the arms is a boss, and the arms and the stem are covered with shallow knot-work. In the spaces on either side of the shaft are long shallow knots with double cords. Above the arms are ten raised pellets in each space, probably meant to represent stars.<sup>3</sup>

*Aycliffe*.—There have been found here twelve fragments of cross-shafts and headstones. (i) A small head or foot stone, 16 inches high, 11 inches wide, and 7 inches thick, now deposited in the museum of Archæology and Ethnology, Cambridge. The sides are tapered and the head is semicircular. The edges are worked with flat knot-work, very much decayed; the front and back have each two nimbed figures of full height. They are represented as clad in short tunics, hollowed or raised above the knees; the legs are bare, the hands folded and pressed on the breast. The faces are thin and of a pointed oval form, around which the hair is indicated. One of the figures holds an object with a trefoil pointed end, possibly a lily. As the two figures are slightly different in height they may possibly be intended to commemorate two children. (ii) A small semicircular headstone measuring 13 inches high, 14½ inches wide, and 6 inches thick, has on either face a cross of the Anglian form, raised on a sunk ground. At the intersection of the arms is a circular boss. A single cord passes over the whole, and is knotted at each termination in three loops. The angles are beaded, and the same design occurs on both faces, while carried round the edge of the stone is a flat-knotted band of a

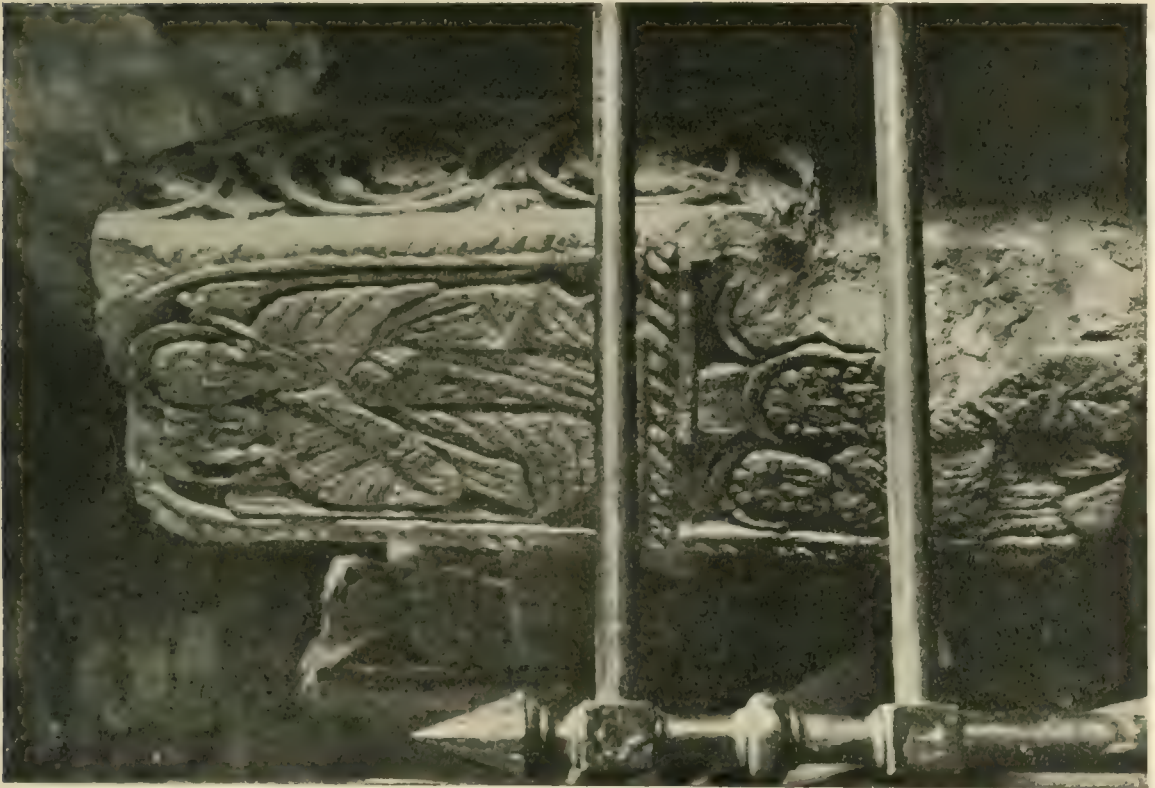
<sup>1</sup> Dur. Cath. Libr. MSS. B. II. 30.

<sup>2</sup> Rev. G. F. Browne (the bishop of Bristol), *Magazine of Art*, part 52, pp. 156-7.

<sup>3</sup> Similar pellets occur on a stone, clearly of early Saxon date, at Simondburn in Northumberland, and on the tympanum of an early Norman doorway at Wold Newton in Yorkshire, where they are associated with an annular object probably intended to represent the moon. Keyser, *Norman Tympana and Lintels*, fig. 16.



AUCKLAND: SIDE OF  
CROSS-SHAFT.



AUCKLAND: PART OF CROSS-SHAFT.



AUCKLAND: SIDE OF  
CROSS-SHAFT.





## ANGLO-SAXON REMAINS

single cord. (iii) A fragment of the arm of a cross of Anglian form. It has knot-work of simple character on the two faces and the end of the arm. (iv) A piece of a cross-shaft 12 inches by 9 inches by 5½ inches, having the lower portions of two figures, and beneath them the head and part of the twisted body of a monster. One edge has a well-cut double plait, the other a single plait. (v) Another exhibits on one side two nimbed figures with their hands clasped, and on the other an eagle preening its feathers. The edges have well-cut knot-work. (vi) Another has portions of only two sides decipherable. One side has two figures precisely similar to the last, while a simple flat knot occurs on the other. (vii) A fragment which has been worked for a window sill and only shows its original use on one side. This has been divided into panels, each containing knot-work. One of these has a large, complicated plait, of which but a portion remains, while below it is a narrow panel crossing the shaft, with a simple four-cord knot. (viii) A fragment used to form the bowl of a thirteenth-century piscina. It has a delicate and finely worked six-cord plait on one side, but from the other the original ornament has been obliterated.

All the above stones, except that now at Cambridge, are lying in the porch or the churchyard, and were taken out of the walls of the church during the restoration of 1881-2.

(ix, x) Built into the south wall of the chancel, inside, are two fragments, the larger of which has two panels, each containing two figures of similar character to those already described. The other, much smaller, is part of a broader stone which has had panels, each containing three figures. Only the heads of one triplet and the feet of another have survived. (xi, xii) In the churchyard are the remains of two large and important crosses. One stands just outside the south door of the chancel, and the other some yards to the south-west of it. The base stone of the former is ancient, and the lower part of the shaft appears never to have been removed from it. The shaft is now complete for its whole length, and the only portions wanting are the arms or keys of the cross-head. About 1845 the upper part of this cross and the remaining portion of the shaft of the other, which was originally very much larger and sculptured in a better manner, were used as lintels over openings in the tower of the thirteenth-century church. They were subsequently erected inside the tower,<sup>1</sup> but some years ago the upper portion of the smaller cross was added to the piece of the shaft in the base in the churchyard,<sup>2</sup> and the shaft of the larger one fixed into a modern base stone. The dimensions of the more perfect cross are: base stone, 2 feet 3 inches by 1 foot 9 inches by 2 feet; shaft, 5 feet 11 inches high,<sup>3</sup> and the base to the top 1 foot 5 inches wide and 7 inches thick. On the south side the greater portion of the shaft is occupied with a design in which two monsters with their heads downwards and having prominent snouts and ears are involved with interlacing bands which originate in the feet of the monsters. Rising to the head they form a large number of irregular loops, and returning downwards seem to terminate in the mouths of the beasts. The central part of the crosshead is a large circular disc, and is treated similarly on both sides. The cross symbol is emphasised by the disc being divided into four portions, each

<sup>1</sup> *Arch. Journ.* iii. 259-261.

<sup>2</sup> Longstaffe, *History of Darlington*, 215.

<sup>3</sup> *Trans. Dur. Northumb. Arch. Soc.* iii. 51.

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of which is filled with a 'triquetra.' These are connected together so that the whole forms a large and symmetrical circular interlacement. The north side has at the foot a band of fine plait-work crossing it; above this, in a panel almost square, is a curiously drawn centaur. The right arm grasps a spear, while the left is turned back along the body and grasps the tail. This, above the point where it is held by the hand, is formed into a knot of seven loops. In the longer panel above are two monsters with their heads upwards, having in the mouths of each two balls, while between the heads are two rings. The necks are in each case divided into two, thus forming four bands which interlace over the whole panels in a much more regular manner than similar bands on the opposite side. In the remaining upper arm of the cross is a piece of simple knot-work. The two side arms were cut off to adapt the stone for use as a lintel. The side facing west has a monster with its head downwards and its body rising in undulations to the top, returning to the bottom again and forming a knot in the spaces left by the undulations.

The other cross-shaft is clearly very much reduced from its original height, as the upper part is wanting. The remaining portion is 4 feet 9 inches in length. It is worthy of notice that the sides have hardly any taper as they rise. On the side now facing east are four panels: the lower contains a Crucifixion, the cross of which has rectangular arms and head. The body of our Lord is represented standing on the ground with the face turned to the left. Beneath are the two soldiers, the one to His right holding a spear, the other an annular object on a long shaft, representing the sponge or cup. In the spaces above the arms of the cross the sun and moon are shown. The panel above is a transverse band, containing knot-work; over it is a larger panel with three nimbed figures all alike, their feet turned sideways to the right and the hands clasped on the breast. They wear long tunics which descend almost to the ankles, with girdles somewhat below the waist. The remaining portion of the upper panel has the tails of two monsters, which curling outwards are reduced to bands which entangle the bodies. On the opposite side, now facing west, are four divisions, the lowest a transverse band of knot-work, above which are three equal panels, the first containing three figures all alike with feet pointing outwards. They wear girdled tunics, and the hands are bound with cords. What is apparently a nimbus may be a cord binding the heads, as it is a continuous band passing from one to the other. The panel contains above this two figures only, similarly vested and bound. The cord (?) passing over the heads is looped into three loops between the heads and beyond them. In the uppermost panel are two figures, their heads unfortunately much shattered. Each one holds in his hand a weapon in an inclined position with the point to the right. One weapon looks like a mace and another a spear. They are habited very differently from the other figures, the skirts of their tunics having loose folds and scallops. No doubt the whole six panels have a symbolical meaning, and the two figures holding weapons may be meant to represent soldiers guarding the five bound figures below them.<sup>1</sup>

The two sides are very differently treated: that now facing south has three divisions, the lowest containing two four-legged creatures with long

<sup>1</sup> The Rev. W. S. Calverley attempts to show that the sculptures on some of the crosses represent subjects described in the heathen sagas. *Arch. Journ.* xl. 143; *V. C. H. Cumb.* i. 266.





AYCLIFFE: CROSS-SHAFT IN CHURCHYARD (XII.), EAST SIDE.



AYCLIFFE: CROSS IN CHURCHYARD (XI.), NORTH SIDE





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bodies, the legs and tails of which form interlacing bands, hampering the bodies, which are strikingly similar to those which occur so frequently in the illuminations in the Lindisfarne Gospels and other contemporary manuscripts. The division above contains a crucified figure with the head downwards. The head and arms of the cross are rectangular and very broad. The feet are placed facing outwards and the tunic is long and girdled. Above this is a division containing knot-work. On the other side the lower panel has been obliterated. In the upper portion are two panels of well-designed and skilfully-executed knot-work.

*Billingham.*—Built into the walls of the tower of the church are several pieces of cross-shafts with sculpture of this period. Three of these can be identified among the larger stones on the south side. They are, however, in such an advanced state of disintegration on the exposed surfaces that unless they are removed from the walls no accurate description of them is possible. In the porch of the same church is a very beautiful fragment of sculpture, but as this is an architectural detail it will be dealt with in the description of the church.

In the British Museum is a fragment of an interesting small grave-cover of the Hartlepool type, which originally measured about 10 inches by 14 inches. The cross border lines and letters are all incised. The cross has semicircular terminations to the arms, and no doubt had a circle at the intersection. In the upper part of the field were the letters A and Ω in large Roman Capitals. The A only remains. In the border, between incised lines, was an inscription in uncials, of which only the letters ORATE PRO P . . . remain. In the more perfect arm of the cross are some other and smaller letters, forming apparently the word *nimbus*.

In the cathedral library, Durham, is a small stone from Billingham. It is sculptured on all its four sides. On one face a seated figure is represented as resting on a straight plank, great prominence being given to the knees.<sup>1</sup> Beneath the figure are small remains of some scroll foliage of an unusual type. On the opposite face the only remaining details are the legs of a human figure, 'representing probably part of the figure of our Lord upon the cross.' A third side has portions of two panels of good knot-work, and the remaining side has a creature resembling a bird.

*Chester le Street.*—The church here contains in its walls some portions of pre-Conquest work, and from time to time numerous pieces of sculpture have been found. A number of these stood for many years in the porch, and about 1882 one of the finest disappeared and has been searched for in vain. The largest of the stones is in the room above the 'anchorage.' It is the base stone of a memorial cross and measures 2 feet 3 inches in height, 1 foot 7 inches in width, and 1 foot 4 inches in depth. The sinking, to contain the foot of the cross-shaft, measures 14 inches by 10½ inches by 3 inches, and in the centre of the bottom of it is a dowel hole 2 inches in diameter and 4 inches deep. The stone is rectangular and its sides are vertical. It is fortunately entire, except that the sculpture has been cut away from one of its sides. On the face a scene is represented which is thus

<sup>1</sup> Haverfield and Greenwell, *Cat. Sculptured and Inscribed Stones Dur.*, 95, No. xxix. This curious treatment of the knees is observable in the representation of the human figure at this period both on stones and in illuminations. It is particularly noticeable in the tenth century MS. of Caedmon's Metrical Paraphrase. *Arch.* vol. xxiv., pl. ix. x. etc.

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described by the bishop of Bristol.<sup>1</sup> 'The main subject must represent our Lord fulfilling the promise that the seed of Eve should bruise the serpent's head. On the highly interesting stone at Dereham in Cumberland<sup>2</sup> there are three figures in a row, under semicircular arcades, with a gross serpent rolling under their feet, the right foot of the dexter figure on the creature's mouth. At Kirkdale the serpent lies beneath the feet of the Saviour on the cross. At Chester le Street, as elsewhere, the serpent becomes a dragon, and the form of dragon selected here is of the deer-shaped type, with huge teeth. Its attitude betokens overthrow, while still it rears its neck and tries to tear the feet which trample on its head. One fore leg seems to be helpless in the corner of the panel, the other is held up under the head and is hampered by the tail. . . . The figures on each side of our Lord may have either of the meanings, while it is quite possible that they may mean something very different from both. . . . If the dexter figure has a cock's head and the similar figure the head of the fox they will represent pride and avarice, two of the sins which have been named as slaying our Lord.'<sup>3</sup> The opposite side has had two large holes cut in it. The remaining surface contains an interlaced design of a very rude and irregular character. The remaining side has a bold example of interlacing bands, in the upper part of which an independent circle occurs.

The other stones are collected in the Parochial Institute, which is on the opposite side of a lane to the west of the church. Four of these are portions of cross-shafts, and are placed on small wooden pedestals against the east wall of the room. The one at the south end measures 33 inches by 10 inches by 8 inches. The sides exhibit various patterns of plaited cords of flat and somewhat coarse workmanship. The next stone, measuring 30 inches by 11½ inches by 8½ inches, has on the front a tolerably well cut four-cord plait, the cords being double. The sides have four-cord twists. The angles are worked with a cable moulding.

The next is a more important relic than any of the others, as it contains a figure subject, consisting of a mounted warrior on whose left arm is a large circular shield with a well-developed boss.<sup>4</sup> Above him are the heads of two dragons, pointing downwards towards the horseman. Above their bodies and partly upon them are the letters E A D M V N D, the M and N being runes. Bishop Browne remarks that this subject represents the evil spirits being withstood by the Scandinavian hero, as on the cross at Gosforth in Cumberland. The two panels below are boldly executed but ill designed, with interlacements of circular form independent of one another, the upper one having two concentric and independent circles, with an endless band interlaced with them, while the lower one consists of a circle with two pairs of diagonal bands, the ends of which interlace with an independent circle. The bands are all double. The sides have four-cord plaits of a design which occurs in various places, as at Brescia, Hexham, Ripon,<sup>5</sup> Hart, etc.

The last of these cross-shafts measures 25½ inches by 10½ inches by 8½ inches, and has on the upper part of the face for about half its length a

<sup>1</sup> Blunt, *A Thousand Years of the Church in Chester le Street*, 185.

<sup>2</sup> *P. C. H. Camb.* i. 276.

<sup>3</sup> Blunt, *op. cit.* 185.

<sup>4</sup> *Arch. Æliana*, x 88.

<sup>5</sup> Pom. Wy. Allen, *Analysis of Celtic Interlaced Ornament: Proc. Soc. Ant. Scot.* xvii. 225 sqq. fig. 123; Cattaneo, *Architecture in Italy*, Engl. ed. 151.



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four-cord divided plait, the rest of the surface being left plain. The ornament on the other three sides has been chiselled away.

Lying in one corner of the room are a large number of detached fragments of various dates. Ten of these are pre-Norman. The largest and most important is half of the base stone or pedestal of a standing cross. It is 27 inches high and 18 inches wide, and the depth of the remaining portion is 12 inches. The front is occupied by a large cross of the patée form, the centre of which is emphasised by an incised circle. Above it is a transverse band of knot-work, the upper portion of which has been cut away. The dexter side bears two human figures which Bishop Browne assumes to represent the Salutation or the Return of the Prodigal, for one of the figures is kneeling with head bent down. The sinister side has a monster or dragon with twisted body and a tail placed in the mouth. The remaining fragments are : (i) a piece 12 inches by 8 inches carved with a lacertine monster ; (ii) a piece of a cross-shaft 16 inches by 12 inches by 9 inches, on one side a rudely-drawn nondescript animal, on the others simple knot-work very much worn ; (iii) fragment of a cross-head 12 inches by 11 inches by 6 inches, containing cross knot-work with double cords ; (iv) piece of a shaft 11 inches by 8 inches by 6 inches with knots on its four sides, similar to that on the lower panel of the 'Eadmund' stone ; (v) a piece of shaft 11 inches by 7 inches by 9 inches long, knot-work on two of its sides, a key pattern on another, and a lacertine monster on the last ; (vi) a fragment 16 inches by 11 inches by 7 inches, with large knots coarsely worked on two sides, the other two surfaces broken away ; (vii) a fragment 15 inches by 11 inches by  $7\frac{1}{2}$  inches has on the face a four-cord plait divided, on the side is a simple looped cord, the angles worked with a cable moulding ; (viii) a fragment 15 inches by  $9\frac{1}{2}$  inches by  $6\frac{1}{2}$  inches, knot-work on three of its sides, on the other a triple spiral figure and circles in the unoccupied angles. The last fragment (ix) is a portion of a sundial, which will be dealt with among the other sundials.

*Coniscliffe*.—There was a church here in Anglo-Saxon days dedicated in honour of St. Edwin. Traces of this building are to be found in several fragments of sculptured crosses built into the present church, which dates from the last years of the twelfth century. On the north side of the tower is a small fragment 8 inches by 6 inches, the exposed face of which shows a few loops of an undivided plait design. On the west side of the tower, about 15 feet from the ground, is a stone 16 inches by 5 inches on the face, apparently a portion of the upper part of one side of a cross-shaft. A bead is run round its angles, and the design upon it begins with a four-cord plait, which after making four or five crossings changes into a series of interrupted knots, of which two remain.

A more interesting and important relic is an early grave-cover, which is built in, face downwards, as a lintel in the western window in the third stage of the tower. The visible portion is 2 feet 6 inches long, 11 inches wide at one end and 10 inches at the other. One part of its surface is covered with a four-cord plait, without breaks, divided from which by three transverse beads is a pair of shears 9 inches long, of the form used to indicate the burial of a female, and a design consisting of a series of sunk triangles placed alternately point to base in parallel rows, a design commonly used in surface ornament in the Norman period. This is the only instance which has come

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under the writer's observation of the shears occurring in association with ornament which in all probability is anterior to the middle of the eleventh century.

*Darlington.*—In the fine church of St. Cuthbert are preserved the heads of two pre-Conquest crosses. The larger one is complete and retains a part of the upper portion of the shaft, showing that the head and shaft were all worked out of one stone. Both sides are alike and have a raised boss in their centres. The form of the head is Anglian, and is ornamented with a double continuous band which, passing the boss, is carried into each of the four arms, where it forms triquetras. The smaller fragment has lost two of the arms. The raised boss is larger than in the other cross and the interlacing band is single but similarly treated.

*Dinsdale.*—Eight fragments of pre-Conquest crosses are built into the walls of the porch of this church. Amongst them are two cross-heads, one of which has two birds upon it, and the other interlacing designs. One portion of a cross-shaft shows the lower part of a panel containing two human figures. In the chancel is the greater part of a hog-backed stone of exactly the same type as the stones found at Brompton in Allertonshire, Arncliffe in Cleveland, and Sockburn. At either end is the large muzzled bear, while on the sides are three separate square panels, each containing two pointed loops interlaced.<sup>1</sup> Along the top is a simple square fret. In the lower part of each side is a semicircular-headed recess, which occurs on similar stones at Brompton and Sockburn, and very conspicuously on that from Arncliffe;<sup>2</sup> its purpose has yet to be explained.<sup>3</sup> In the churchyard is the lower portion of the shaft of a large memorial cross, fixed in the ground. It bears coarsely executed interlaced designs on a large scale. On the side facing west is the unusual feature of a compartment in the form of a heater-shaped shield, containing a curious design with triquetra terminations and small isolated bosses. A somewhat similar feature occurs on one of the stones at Sockburn.

Lying near to this cross is a huge and rudely worked stone coffin with its lid complete. There is little doubt that this is of pre-Conquest date. The lid is slightly coped and along its ridge is a large plain cross in high relief.<sup>4</sup>

*Durham.*—In the city of Durham two distinct groups of pre-Conquest stones have been brought to light. These groups are both of unusual importance and interest and stand out in marked contrast to the other small and isolated fragments which have been from time to time discovered, but which have no connection with these two series. The tradition which has come down from Leland's time, of the bearers of St. Cuthbert's body bringing with them a carved stone cross from Lindisfarne<sup>5</sup> and setting it up at Durham, no doubt rests on a foundation of fact, but the identification of this particular cross with one in the wall of St. Oswald's church must now be regarded as an archaeological error of the last century. St. Oswald's church, on the evidence of no less than five pre-Conquest crosses found in its walls and vicinity, appears to have had a predecessor, at a date anterior to the

<sup>1</sup> *Proc. Soc. Antiq. Newcastle-on-Tyne*, ix. 62.

<sup>2</sup> Haverfield and Greenwell, *op. cit.* 126, No. lxiv.

<sup>3</sup> Canon Greenwell suggests that these recesses are meant to indicate the doorways of man's last house, which the hog-backed stone is believed to typify.

<sup>4</sup> Hodges, *Reliquary*, New ser. p. 79.

<sup>5</sup> *Symeon of Durham* (Rolls Ser.), i. 101.





BILLINGHAM: FRAGMENT OF GRAVESTONE, NOW IN BRITISH MUSEUM.



JARROW: FRAGMENT OF CROSS SHAFT IN NORTH PORCH.



ST. OSWALD'S, DURHAM:  
PART OF CROSS SHAFT.



DURHAM: COPED GRAVE COVER IN CATHEDRAL LIBRARY.





## ANGLO-SAXON REMAINS

arrival of the congregation of St. Cuthbert and the building of the first church on the plateau.

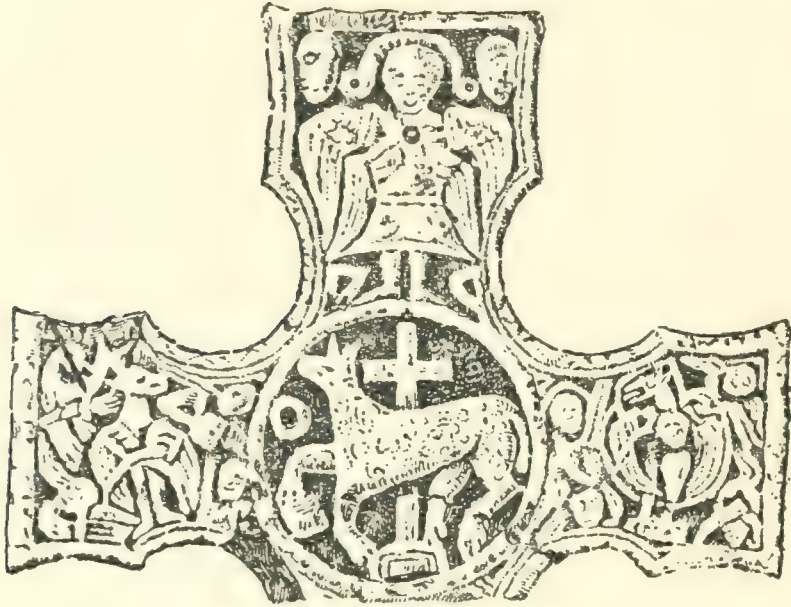
The most important of these crosses was built into the west wall of the fifteenth-century tower of the existing church and was in two pieces. One piece was removed from the church to the Cathedral Library in 1880. A few years later another portion of the same cross was taken from the tower, and these two were found to fit each other. In 1895 the other stones forming this group were taken out of the wall of the churchyard which divides it from Church Street.<sup>1</sup> As there can be no question of their early date, the finding of those additional examples is an important factor in the history of this portion of the city. The ornamentation on the largest cross is well executed and extends to all four faces. Two of the designs exhibit the lacertine monsters already referred to in other cases. One of these has two beasts, their heads respectively pointing upwards and downwards, their bodies contorted, and the limbs and tails elongated into bands, which are interlaced with, and hamper, the bodies. On the opposite side the lowest panel also has two somewhat similar monsters, but differently treated. Their bodies are crossed saltire-wise and their heads and tails roll inwards in a spiral form. The remaining panels contain interlaced designs similar to those of the local type. Another cross-shaft is 4 feet 11 inches long, 1 foot 6 inches wide and 9 inches thick. The lower portion of the cross-head remains, and as the shaft is complete at the foot it is evident that the whole was worked out of one stone, and when complete would be about 8 feet in height. The knot-work is flatly executed and is of simple but effective character. The two sides are alike and contain two groups, each of them independent circles, through which four bands are plaited and joined at their ends. One of the narrow sides has five parallel bands interlaced at either end and at two intermediate places. The other side has similar bands treated somewhat differently. The angles have a bead moulding, which is double on the two broader sides. Another cross, of practically the same size, also containing the lower portion of the head, has on either of its sides a single ornamented panel consisting of two complete circles through which are passed diagonally four bands joined at their ends. The sides are plain. A small fragment of the head of a cross is 1 foot 10 inches long and 9 inches wide. It seems to be the upper and lower arm, and is ornamented with knot-work. In the centre is a raised boss. A fragment of a cross-shaft, 8 inches high, has a portion of one side and the half of the two faces. It is ornamented with knot-work of the local type. It was found loose under the 'Black Staircase' at Durham Castle, and there is no record of its previous history.

The most important find of sculptured stones in the city of Durham occurred in the spring of 1891, when the foundations of the eastern portion of the Chapter House, part of which had been erected during the episcopate of Geoffrey Rufus (1133-1140), and destroyed in 1796, were taken up to be replaced with new foundations. It is known that the cemetery of the monks was in the open ground to the south of the quire, and east of the Chapter House, and occupied the same spot as the cemetery of the old congregation of St. Cuthbert, which occupied the church at Durham from 995 to 1083.

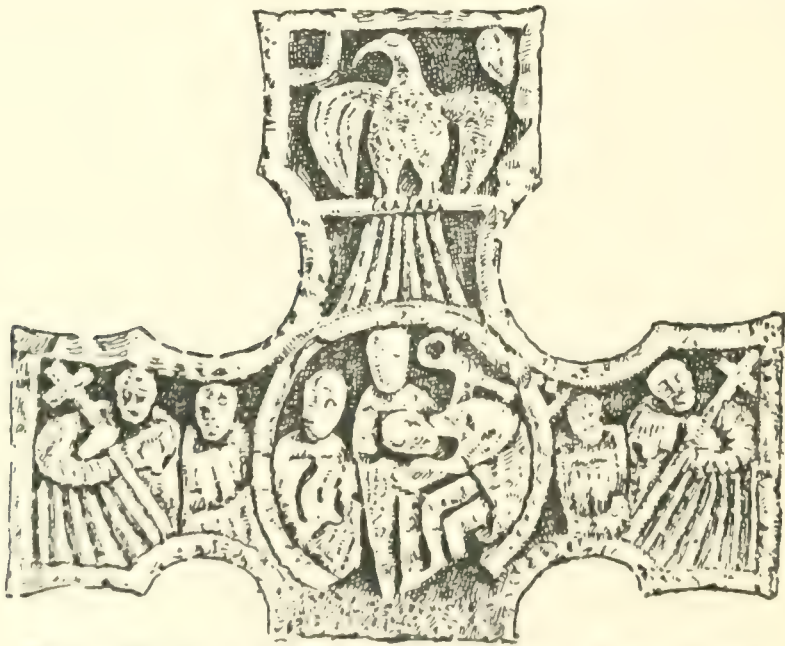
<sup>1</sup> Haverfield and Greenwell, *op. cit.* 73, 78; *Trans. Dur. Northumb. Arch. Soc.* iii. 32 and plate; iv. 281, pl. 1-4.

## A HISTORY OF DURHAM

The east end of the Chapter House encroached on the site of the cemetery, and the memorial crosses and grave covers must have been broken up and used in the foundations of the new building. They consist of the heads, more or less complete, of four crosses, the greater portion of a large coped grave cover, broken into three pieces, and a smaller grave cover, with a cross in relief upon it. The accompanying illustrations render a minute description unnecessary. It will



FRONT OF PORTION OF CROSS (A) FROM THE CHAPTER HOUSE, DURHAM.



BACK OF PORTION OF CROSS (A) FROM THE CHAPTER HOUSE, DURHAM.

be convenient to mention them in the same order as that in which they occur in the Durham Catalogue.<sup>1</sup>

(A) This is the largest and most complete of the series. The head, which is of the Anglian type, has, within a circle in the centre of one face, the Holy Lamb, represented as standing in front of a cross fixed in a base on the ground. In front of the lamb is a circle, the meaning of which is obscure, unless it is meant to represent the sun.<sup>2</sup> In the upper limb is an angel with four wings, and on either side of the angel's head is a human face, looking outwards. The side limbs contain figures of winged monsters and cherubs. The other face has in a circle a group of three figures, which no doubt represents the baptism of Christ.<sup>3</sup>

In the upper limb is a bird with wings extended and a long tail. The side

<sup>1</sup> In Canon Greenwell's Paper on these crosses, *Trans. Dur. Northumb. Arch. Soc.* iv. 123, plates 1-6, this order is reversed.

<sup>2</sup> It does not occur in any one of the examples of this emblem on the Norman tympana illustrated in Mr. Keyser's work. Figs. 98 to 108.

<sup>3</sup> A similar subject occurs on a cross in Kells churchyard, co. Meath. *Illus. Arch.* i. 165.



## ANGLO-SAXON REMAINS

limbs have each the same subject, two figures holding books; the outer figure is the larger, and holds a cross as well as a book. The ends of the arms and the sides of the upper limbs have upon them panels of interlaced work.

(B) This fragment consists of a central portion and side limbs only. On one side it has the representation of a Crucifixion. The figure of our Lord is nearly all broken away. On either side of the cross are two figures, with the arms folded. In the side limbs are again the same figures as described in A. On the opposite side is the representation of the Baptism of our Lord as on A.

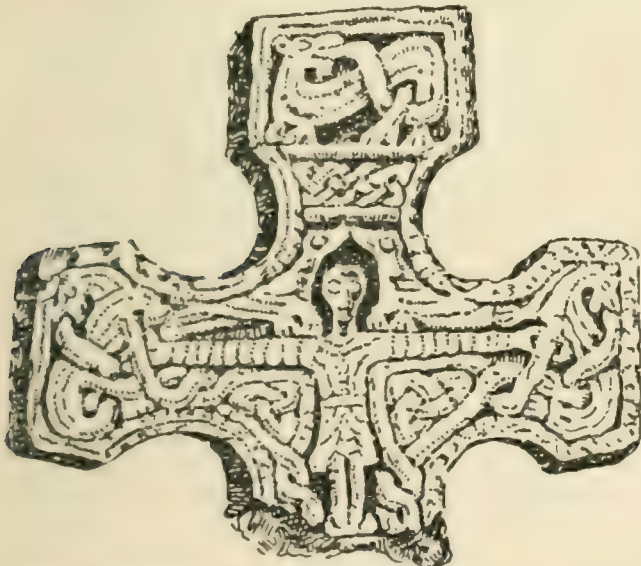


FRONT OF PORTION OF CROSS (C) FROM THE CHAPTER HOUSE, DURHAM.

(C) This fragment has the centre, one arm, and the lower limb of a cross head. In the centre, within a circle, is the Crucifixion, with a single figure on either side of the cross. In the side limb are two monsters placed in saltire, the heads outwards, and the bodies hampered by an interlaced band. In the lower limb is a draped kneeling figure holding a tree, beyond which is a long-legged bird looking towards the figure. The trees have terminations like bunches of grapes. On the opposite side the Baptism occurs again, and above it the tail of a bird, as in A. In the lower limbs is an animal, which may represent a lion combating with a snake which is biting the lion's ear. On the body of the lion are incised lines, representing a twisted band with three loops.

All these three cross heads are made of the same kind of stone, and were probably all carved by the same hand, and at nearly the same time.

(D) Head of a cross nearly complete, of much coarser stone and ruder workmanship than the others. On one face is a figure having arms of a length out of all proportion to the figure itself, and which are extended and grasp the limbs of two monsters which occupy the side limbs of the cross, and are involved with interlaced bands.



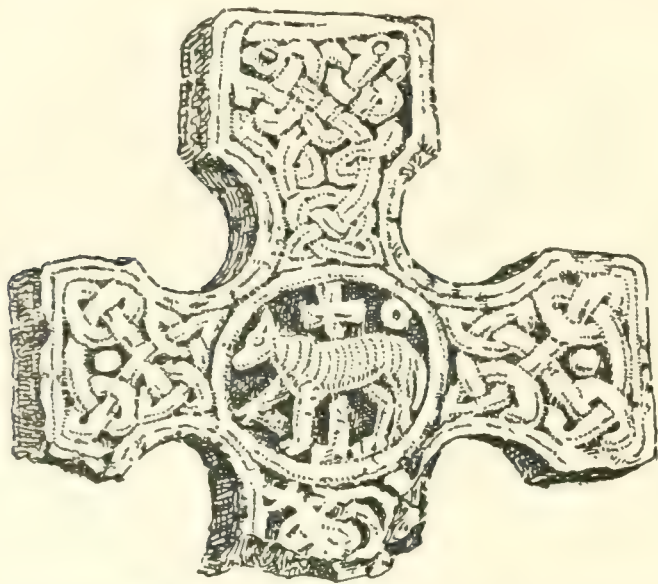
FRONT OF PORTION OF CROSS (D) FROM THE CHAPTER HOUSE, DURHAM.

In the triangular spaces above and below the arms of the figure there are, in those above, two birds with their beaks touching, while below are triquetras. On the opposite face, within a circle, the Holy Lamb, behind which is the cross standing on the ground, and

## A HISTORY OF DURHAM

over the back the circular object previously mentioned. The upper limb has two monsters involved with interlaced hands. The side limbs have knot work. The lower retains a small portion of the body of a monster. The ends

of the arms have knot-work upon them.



BACK OF PORTION OF CROSS (D) FROM THE CHAPTER HOUSE, DURHAM.

The remains of the massive coped grave cover are of especial interest, and it is to be regretted that the whole of it was not recovered ; something like one quarter is wanting. The sloping sides are divided into panels, each of which contains an intricate design of interlacing knot-work. On the remaining end, although the stone itself is rectangular, the ornament finishes in a semi-circular form. The triangular spaces thus produced are filled with interlacements which accommodate them-

selves to the spaces. Two of these are correctly worked out, but that filling the end space is very irregular, and the under and over principle is not consistently maintained. The chief interest lies in the way in which the ridge and hips of the coped top of the stone are treated. Along the ridge are the bodies of two serpents, carried parallel to one another. They descend along the angles or hips, whence their heads point outwards. The stone is much defaced on the ridge, but it is probable that the bodies crossed at the point where they reached its end. The tails were on the piece which is wanting.<sup>1</sup> The dimensions are 4 feet 6 inches long (originally probably 6 feet), 1 foot 10 inches wide, and 1 foot 2 inches high.<sup>2</sup>

The larger portion of a flat grave-cover with raised cross has the sculpture very rudely worked. In the centre of the cross is a circle containing a cross patée. The upper limb is broken away. Each limb contains a figure, two of which are beasts and one human. They were no doubt intended to represent the evangelistic symbols. On the shaft of the cross is a human figure with wings and nimbed. A small fragment, 9 inches high, has sculpture on one of its sides representing portions of two human figures.<sup>3</sup>

A fragment which once formed a side limb of a cross-head, measuring  $8\frac{1}{2}$  inches long,  $8\frac{1}{4}$  inches wide, and  $3\frac{1}{2}$  inches thick, has well designed and carefully executed knot-work on the two sides and the end of the arm.<sup>4</sup>

<sup>1</sup> Twisted serpents occur on the jambs of the western doorway of the ancient church at Monkwearmouth, where the tails terminate in a curious expansion instead of a tapering point. *Trans. Dur. Northumb. Arch. Soc.* i. pl. 4, 7 ; *Reliquary*, vii. 145.

<sup>2</sup> *Trans. Dur. Northumb. Arch. Soc.* iv. pl. E.F. Pre-Conquest grave covers of this form are rare. Bostell figures two examples from Bakewell and St. Dionys, York. *Christian Monuments*, 12, 14.

<sup>3</sup> Haverfield and Greenwell, *op. cit.* 89, No. xxvi.

<sup>4</sup> Found since the *Catalogue* was published in 1899.



## ANGLO-SAXON REMAINS

*Elwick Hall*.—Built into the wall on either side of the chancel arch of the church are two stones, on one of which is a sculpture said to represent the expulsion of Adam and Eve from Paradise. The figures seem to represent the angel and Adam and Eve, with trees above them. The other stone has a cross head of Anglian form in relief, with beaded angles formed by an incised line, and two incised circles at the intersection. The head of the stone is semicircular and the triangular spaces above the arms of the cross each contain a 'triquetra.' Below the arms are the beginnings of interlaced designs, consisting of four-cord plaits which have continued down the sides of the shaft, showing that the remaining portion is only the head of a headstone or a grave-cover.<sup>1</sup>

*Escomb*.—Preserved in the ancient church are five stones of the pre-Norman period. Two of these are portions of a cross-shaft bearing upon them well-designed scrolls containing birds and animals interspersed with foliage scrolls belonging to the same school of work as those which have been described as being of the Hexham type. The angles of this cross have been worked with a cable moulding. Another fragment has interlaced work upon it. There is also in the chancel a grave-cover with a plain cross in a sunk panel with semicircular head, on the cross are raised bosses, and on the side of the shaft two raised circles.<sup>2</sup> The cross has a tapering shaft and a square base. The other is only a small portion of a semicircular headstone of tapering form. It has a plain square-limbed cross worked on either of its sides, and is probably not earlier than the eleventh century.<sup>3</sup> On a rockery in the vicarage garden are one or two small fragments with interlaced work upon them. From the wall of a house in Escomb there has been removed to Durham<sup>4</sup> a small stone measuring 9 inches by 5 inches, having upon it part of a very beautiful design of foliage and grapes.

*Gainford on the Tees*.—The church here has produced a larger number of fragments of this period than any other in the county. Nineteen of these stones were removed to the Cathedral Library at Durham in 1896.<sup>5</sup> The largest is a cross, complete, with the exception of the side limbs of the head. It has raised bosses on either side at the intersection. One face has a long panel in which are two monsters one above the other interspersed with knotted bands. Below is a panel containing regular plait work without any break.<sup>6</sup> The opposite face has three panels, the upper one containing a combination of a regular plait with knots above it; the centre one two figures which appear to be bound together at their waist, and the third, a rectangular panel containing a circular knot-work design. The sides have bands of knot-work, and similar ornament fills the spaces in the arms of the cross. A considerable portion of the lower part of the shaft is left plain.

Another portion of a shaft of a large cross has upon one face two monsters in similar relative positions to those already described. They are in a better state of preservation, and have their limbs and bodies bound and hampered with very irregularly drawn knotted bands. The opposite face has a monster

<sup>1</sup> *Proc. Soc. Ant. Newcastle-on-Tyne*.

<sup>2</sup> *Building News*, Nov. 28, 1879.

<sup>3</sup> *Ibid.* ii. 97; *Reliquary*, viii. 69; *Illus. Archæologist*, i. 225; Baldwin-Brown, *The Arts in Early England*, ii. *passim*.

<sup>4</sup> Since the *Catalogue* of the stones there was published.

<sup>5</sup> Haverfield and Greenwell, *op. cit.*, Nos. xxxi–xlvi.

<sup>6</sup> Romilly Allen, *Celtic Art in Pagan and Christian Times*, p. 259.



## A HISTORY OF DURHAM

curled in spiral fashion, its body divided into three sections by parallel lines. Its tail divides on leaving the body, and forms a regular plait, without break, of double cords; it returns and crosses the body, and disappears where the stone is broken. The sides have knot-work designs.

The head of a cross, almost complete, has raised bosses at the intersections, containing four triquetras joined together. The arms are filled with interlacing plaits divided down the middle. A small fragment is the central part of a crosshead and has an open cross in the boss and knot-work on the surface. A still smaller fragment is the centre of a cross-head, the circular boss of which contains a key pattern. Another fragment is part of a limb of a cross-head, much weathered, but on one face an interlaced pattern is visible.

Another consists of a portion of the lower limb and the upper part of the shaft of a cross. It is ornamented with knot-work, having divided bands arranged in a very unusual manner.

Two more fragments are parts of the limbs of cross-heads with simple but bold knot work.

The next is a portion of a shaft of a cross. On one face is a complete panel and a portion of another. The former contains three figures with their



PORTION OF CROSS SHAFT FROM GAINFORD.

arms raised and placed together, behind which passes a bar or cord which binds them all together. In their hands are square objects which may represent books. The broken panel contains the lower portions of two figures. The other face has what appears to be the stem of a cross, tapering, and divided into three.

The next is a portion of the top of a cross-shaft, sculptured on all four sides. On one face is a man on horseback, his hair curled behind, and a spear on his right side. On the opposite face is part of a figure with hair curled on two sides of the head. Another face has the head of an animal, a complete bird, and knot-work combined with them. The last face has a simple knot-work design with a divided band.

Four small fragments have carving on two of their sides, mostly of simple knot-work. One has a fret pattern on one of its sides.

A portion of a grave-cover is of very unusual character. Its angles are beaded, one having a cable moulding, another a plaited cord moulding. On one of the edges is part of a much-worn inscription which appears to read :  
ALDIHESETAE.

Two pieces of another grave-cover have on one side two bands of carving, the upper showing a twisted band forming a continuous looped cord,<sup>1</sup> the lower a four-cord plait with divided bands.

Another grave-cover to be noticed here is of a very unusual form. It is rectangular with straight and slightly tapering sides, with a flat top.

<sup>1</sup> Romilly Allen, *Proc. Soc. Ant. Scot.* xvii. 225, Fig. 11.

## ANGLO-SAXON REMAINS

Along the top is a band with an interlaced ribbon. The ornamented side has an arcade of six members worked upon it. The arches are semicircular, and have capitals and columns beneath them. The wider end has two arches of the arcade worked upon it, the other a square cross patée. As one side is plain it is probable that this stone was placed against a wall inside the early church. There are still remaining at Gainford a number of stones. In the porch of the church are two flat grave covers, used as portions of the stone seats. That on the east side has a cross, with broad tapering shaft worked in a sunk panel with semi-circular head. The angles of the shaft are beaded. The cross-head is of the circular patée form, and all four limbs are completely developed. In the spaces between the limbs are large balls. The panel has beaded angles produced by grooves.

That on the west side has a square cross patée with all the limbs equally developed and enclosed by a circle. The stem has parallel sides for a distance equal to the diameter of the circle. It then divides and forms two and a half lozenges before it reaches the foot. The lozenges enclose smaller ones, and the spaces between them become chevrons, or they may be described as three parallel chevroned bands produced by four incised lines. The whole design seems to anticipate the chevron work of the Norman period. In general character however it appears to be of early date, and as similarly formed chevrons occur on the portion of a cross-shaft in the tower, associated with distinctly pre-Conquest designs, there can be little doubt that this grave-cover also belongs to this period.

Built into the walls of the porch are several other stones. One of these is a headstone with rounded top, 14 inches wide and 16 inches high. The bottom is left rough for inserting into the ground. The upper part has a sunk panel containing a small cross patée 6 inches square, with a shaft only  $1\frac{1}{2}$  inches high. In the north angle of the porch are two small fragments with some remains of sculpture with lacertine designs, but not sufficient to indicate what they may have been.

Over the doorway, between the newel staircase of the tower and the ringing chamber, and forming the lintel to it, are two pieces of cross-shafts. The position they occupy only allows one side of one of them and two sides of the other to be examined. On one is a series of designs produced by incised lines, two of which are visible. One has eight chevrons with their points towards the centre of the shaft, the other is a surface pattern produced by lines crossing at angles of about 40 deg. and  $1\frac{1}{2}$  inches apart, forming a series of small lozenges. The other stone has on the face a design very similar to the spiral monster with tail forming the regular plait-work described above.<sup>1</sup> The side visible has upon it an interlaced design with a series of circles looped together with a continuous band.

At the east end of the south aisle is a small fragment measuring 7 inches by 7 inches on the face, with a plain knot design. On the east side of the exterior of the porch is another piece 16 inches by 9 inches with a six-cord plait of divided bands. In the same wall is another stone, which appears to be the edge of a grave-cover, worked with a design resembling an interlaced arcade.

In the garden wall of the vicarage is a stone measuring 11 inches by 9 inches with knot-work on the face.

<sup>1</sup> Haverfield and Greenwell, *op. cit.* 99, No. xxxii.



## A HISTORY OF DURHAM

*Hart.*—In the church are six portions of pre-Conquest crosses, a sundial, and two pieces of turned balusters. One of the fragments built into the west wall of the nave is part of the shaft of a cross, with a panel with two figures in relief upon it. The fragment with the best work measures 18 inches by 11 inches by  $7\frac{1}{2}$  inches. From one side the ornament has been chiselled away. The remaining face shows that the fragment is from the top of a cross-shaft. The angles are beaded. The ornament begins with two conjoined 'triquetras,' below which is the frequently recurring design of three complete circles, through which four bands, placed saltire-wise, interlace and have their ends joined. The other face also has the design already described in connexion with the 'Eadmund' stone at Chester-le-Street. In the Hart example the design is well set out, and there is a sequence of three loops on either side of a centre line, occupying a length of  $11\frac{1}{2}$  inches. On the uninjured side the same design occurs again on a smaller scale, but as the width is less, a sequence of four loops is required to fill the same length.

Another fragment measures 15 inches by 10 inches by  $6\frac{1}{2}$  inches. Upon the uninjured face the design just described occurs again. It is divided into two sections by a transverse band, the surviving portions being therefore the lower portion of one and the upper portion of another. The sides contain four-cord plaits.

Another fragment measures 17 inches by 11 inches by 7 inches. One face contains a panel filled with regular plait-work. Below this is the upper portion of the figure of a man on horseback, with a spear in his right hand and appearing over his shoulder. The opposite face has the same plait. The two sides are occupied with knot-work, one of which is No. 11 in Mr. Romilly Allen's *Analysis*.<sup>1</sup> The other is similar to No. 106 in the same list.

Another is a portion of the end of the arm of a cross with knot-work on the end and one of the sides.

Another is a small fragment of a cross-shaft with knot-work on three of its sides.

Another fragment has sculpture on two of its sides, one of which indicates that it is part of the head of a cross which had a circular cross patée in a circle.

The sundial is described among the others below.

*Haughton-le-Skerne.*—The ancient church here was one of the last in the county to undergo the process of enlargement and restoration, which took place in 1890. In the walls of the chancel were several portions of pre-Conquest crosses. These were taken out, but others, which were found during the alterations, were unfortunately built into the walls of the porch and the north wall of the nave, and much of their interest has been lost. The two stones in the porch are small; one shows some irregular knot-work on its face, and the other, not quite half of a small cross patée, is no doubt a portion of a grave-cover. The other stones are arranged in two groups in recesses in the north wall of the nave. In the western group are four stones, the most important being a small grave-cover or headstone, 2 feet long and 11 inches wide. It has a semicircular head and contains a cross

<sup>1</sup> *Proc. Soc. Ant. Scotland*, xvii. 232, 248.

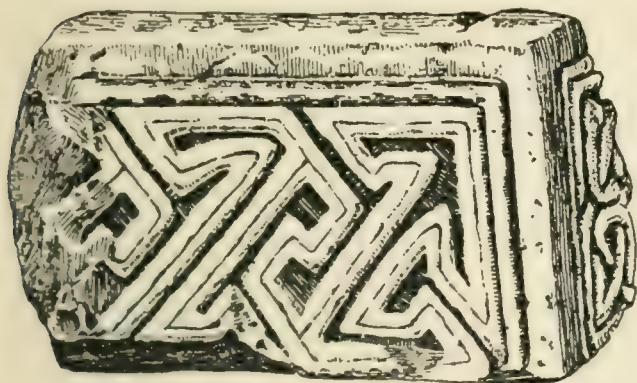


## ANGLO-SAXON REMAINS

patée, the lower arm of which disappears in the shaft. It is represented as having beaded edges, but no other ornamentation. Two of the other stones in the same group are fragments of cross-shafts, having crudely executed knot-work upon them. Another very small fragment, only 8 inches long and 4 inches wide, appears to be a portion of the ridge of a hog-backed stone, as it has upon it the fret ornament which occurs on more than one of this class in the Durham collection.

In the eastern group are three stones. One of these is a portion of a cross-shaft, measuring 4 feet in length and 14 inches in width, and about 5 inches in thickness. The surface is very much defaced, but it appears to have had panels containing monsters in connexion with interlacing bands. The side visible has a simple interlaced design upon it. The other stones are all of small dimensions. One has a rudely worked key pattern, and another a portion of a panel with simple plait-work. The last is the most important of all. It is a fragment measuring 15 inches by 6 inches, and has upon it a beautifully executed sculpture, in a good state of preservation, of twisted monsters. It is remarkable that such a delicate piece of work should be found here, where all the other specimens are of crude and debased character.

*Hurworth.*—The church has been entirely rebuilt. A single stone, contemporary with the earliest church here, is in the Durham collection, and is here figured. It is a small portion of one of the upper angles of the base stone of a cross, and is 1 foot 3 inches long, 10 inches high, and 6½ inches wide.<sup>1</sup> It has sloping sides and the usual triple bead on the angles. The larger face has a well executed key pattern. The other has a small portion of a panel filled with knot-work. In both cases the bands are divided.



PORTION OF BASE STONE OF CROSS FROM HURWORTH

*Farrow.*—The classic site of the monastery of St. Paul still retains some fragments of the sculpture of this period. In the porch attached to the modern nave are several stones which must be dealt with in this section, although by far the larger number of them are detached architectural details.

On the west side of the porch are two small stones which are possibly both fragments from the same cross. They contain sculpture of the highest artistic merit, and belong to the time when the Anglian school was at its zenith. One has a single whorl of a rolling scroll with trefoil and other foliage terminations to its stems, and involving a human figure of juvenile appearance, holding in the left hand a small circular shield, and in the right some weapon with which he attacks a creature in the scroll facing him. The other has double scrolls starting from a central vertical stem. The two whorls, which are nearly complete, have birds perched upon stems with

<sup>1</sup> Haverfield and Greenwell, *op. cit.* 96, No. xxx.

## A HISTORY OF DURHAM

trefoil foliage terminations. On the opposite side of the porch is a portion of a cross-shaft with three separate designs upon it; the upper one very imperfect, the intermediate one the plait mentioned as occurring at Chester le Street, Hart, and elsewhere; the lower the regular plait without breaks.

Perhaps the most interesting stone of all is given a conspicuous place in the centre of the group. It is part of a grave-stone, and retains the lower arm and shaft of a cross of the form which had square block terminations to its limbs and a similar block at the intersection. The surface of the stone round the cross is sunk and the angles of the cross beaded. The angles of the slab have a cable moulding, and the surface contains a portion of an inscription which reads: IN HOC SINGVLAR[I SIG]NO VITA REDDITVR MUNDO.<sup>1</sup> A portion of the same cross appears to have been worked on the edge of an inscribed Roman stone, now in the Black Gate Museum, Newcastle-upon-Tyne, as it contains the side limbs and intersection of the cross, and the cable moulding on the angle. If this assumption is correct it would appear that the memorial was incorporated with the wall of some building, the stone which is worked on the edge serving the purpose of a bonding or tie stone, while above and below it were two slabs, carrying the remainder of the design.

In the Durham collection is the stone here figured from Jarrow. It was found outside the churchyard to the south-west of the church.

In the Black Gate Museum at Newcastle-upon-Tyne is another portion of a memorial slab with a cross upon it, in a semicircular recess. The cross is of the form just described as remaining at Jarrow, but has bosses which appear to have had interlaced work upon them in each of the five squares. The stone measures 1 foot 10½ inches long, 1 foot 9½ inches wide, and 6½ inches thick. There are no traces of an inscription.<sup>2</sup>

*Monkwearmouth.*—There are considerable remains of the ancient church in the vestry of the existing church, a large collection of fragments of various dates having been built into its walls. Amongst them are some architectural details and portions of sepulchral memorials. One is a large slab bearing a cross, with square block terminations to the head, the two side limbs, and the foot of the shaft. It bears the inscription: HIC IN SEPVLCHRO REQUIESCIT CORPORE HEREBERICH PRB. The angles of the slab have a bead moulding which has ended, just above the head of the cross, in two scrolls. There are two small fragments, each of which contains interlaced designs of considerable intricacy and refinement.<sup>3</sup> In addition to these is a small portion of a panel which has upon it the representation of a combat. The two figures engaged have short tunics and bare legs. The sculpture is very much broken and the heads are both gone. The dexter figure has a circular shield in the left hand. He appears to have disarmed his opponent, as a sword of the 'spatha' form is doubled up and lying on the ground.

*Norton.*—Built into the jamb of the chancel arch of the church is a small fragment measuring 14½ inches by 9 inches. It exhibits portions of two panels containing knot-work, both incomplete.

<sup>1</sup> Hubner, *Inscriptiones Britannicæ Christianæ*. Berlin, 1876; *Arch. Æliana* (New ser.), x. 195; xx. 27; xxii. 30.

<sup>2</sup> The dedicatory inscription at Jarrow will be dealt with in connection with the church itself.

<sup>3</sup> Described by the bishop of Bristol 'it comes nearer to a representation in stone of one of the marvellous pages of the Lindisfarne Gospels than anything else which can be shown.' *Notes on Church of St. Peter, Monkwearmouth*, 1886, p. 13.





MONKWEARMOUTH : GRAVESTONE OF HEREBERICH.





## ANGLO-SAXON REMAINS

*Sockburn.*—The ruined church here occupies the southernmost point of the county. The ruins were cleared of rubbish and the Conyers porch repaired and roofed in 1900. It was known, before this was done, that a large number of remains of the pre-Conquest period existed on the site, for when the church was unroofed and abandoned in 1838 many fragments were taken from the walls. All these are now collected together in the repaired Conyers porch, and are arranged so that they can be examined without difficulty. Twenty-five are of the pre-Conquest period. For convenience of reference it has been thought well to take them as they would naturally be referred to from a plan of the porch. Facing east, and ranging from left to right, there are six rows of stones fixed in bases or lying on the floor. The others are detached fragments. The larger cross-shafts are fixed in stone bases, the smaller ones are cemented to the floor. The first measures 2 feet 3 inches high, 1 foot wide, and 8 inches thick. Only the side facing west retains its ornament. In the upper part are the lower portions of the bodies of four serpents twisted together in pairs, while below these the surface is covered with an undivided plait without breaks.

The second stone measures 3 feet high by 1 foot 8 inches wide by 7 inches thick. The remaining ornamentation is confined to the side facing west, and is in a very damaged condition. It seems to consist of a very irregularly arranged double band connected with monsters.

The next is of a very coarse-grained sandstone and measures 2 feet 3 inches by 1 foot 7 inches by 6 inches. The ornament is again confined to the west face and consists of a series of circular rings forming a chain, with a straight band carried vertically through their centres. All are double or divided.<sup>1</sup>

The second row are hog-backed stones, which are all described together below.

The first in the third row is a portion of the upper part of a cross-shaft which measures 2 feet 9 inches high, 1 foot 1 inch wide, and 10 inches thick, and shows that the whole was in one stone, as it retains part of the lower arm of the cross. Carving remains on all four sides, that facing west showing that the head of the cross was ornamented with the usual triquetras with divided bands. Below this a large serpent appears, his body tied into a knot and his head downwards. Beneath is a man on horseback, hawking. His right hand holds the bridle, his left the hawk. The horse, with head inclined downwards, stands on a transverse twisted band. Under this is a portion of a scene representing a combat between two men. Their arms are crossed, and the dexter figure appears to be wounded in the head. Between them, and below their arms, is a circular shield with a boss. On the side facing east are again two figures apparently in combat, much damaged, but they appear to wear helmets. Under them is a double spiral, and below that a six-cord plait with divided bands. The side facing north has a very curious and unusual design of a chain, the links of which consist of triangular objects with rounded tops, and are double, or divided by a line. Only a very small portion of the fourth side remains. It shows the bodies of two monsters twisted together.

The next measures 2 feet 2 inches by 1 foot 2 inches by 9 inches, and has upon its west face a panel containing an animal, probably a deer. Its

<sup>1</sup> Romilly Allen, *Proc. Soc. Ant. Scot.* xvii. 225, Fig. 17.

## A HISTORY OF DURHAM

head, which was turned backwards, looking towards the tail, is broken away. The north face exhibits the legs only of two figures, and that towards the south the termination of a shield-shape panel.

In the fourth row the first stone measures 2 feet 4 inches by 1 foot by 7½ inches. It has a panel which contains the standing figure of a warrior. He has a circular shield on his left arm, and his right hand grasps a spear, the shaft of which rests upon the ground and the point rises above his head. He wears a helmet.

The next stone is apparently not part of a cross-shaft. It measures 12 inches in height, 2 feet 1 inch in length, and 9 inches in thickness. On the side facing the east are two warriors on horseback. The horses are shown as if trotting, their heads raised. Their tails are long and tied into knots. The men wear helmets, and hold the bridles in their left hands, and in their right long spears with the points inclined downwards. The saddles have high peaks at the back which end in knobs. Altogether, this is the most interesting sculpture of the series. The forms represented should be compared with those of the knights in the woven silk tissues which were taken from St. Cuthbert's body.<sup>1</sup> The top of the stone is broken; the ends and foot are plain. The other side has a knot-work design of intricate character, but in an advanced state of dilapidation. It seems to consist of a six-cord plait, every alternate crossing of which is bound by a continuous ring.

The fifth row has three hog-backs.

The first in the sixth row is a portion of a cross-shaft 2 feet 11 inches high, 1 foot 2½ inches wide, and 11 inches thick. It retains ornament on all its four sides. On that facing west is an interlaced design of a six-cord plait with divided bands. That facing east has in the upper part two figures very much damaged. Below them the plait is repeated for a short distance, and below this again two figures appear apparently in combat. The two sides have each the chain of curious triangular links previously described. In one the links form a simple chain, in the other they are more closely combined, each link interlocking with two others on each side of it.

The next one measures 3 feet 10 inches by 11 inches by 8 inches. The west face retains three panels, the upper one having a six-cord plait, undivided. The next shows a man who wore a helmet of conical form. The portion of the stone carrying the helmet and the head has unfortunately flaked off. The right hand grasps a long spear, and in the left is a short sword with a broad, double-edged blade. Below is a stag. The opposite face has three panels, with a six-cord plait in the upper one, two divided loops with pointed ends interlaced in the next, and in the lower a dog with curled tail and head looking backwards. The two sides have double looped cords,<sup>2</sup> and below them, on the side facing north, is a triquetra.

The next is the largest stone in the series. It is the greater portion of the shaft of a tall cross and measures 7 feet in height, 1 foot 2 inches by 9 inches square at the base, and 9 inches by 5½ inches at the top, where it is broken away. For a distance of 4 feet 4 inches from the base the surface is plain, from which point to the top it is ornamented on all four sides. The character of this ornament is so unusual and of such interest that it is much to be regretted that the remainder was not recovered. The side facing west

<sup>1</sup> *Trans. Dur. Northumb. Arch. Soc.* i. 53.

<sup>2</sup> Romilly Allen, *op. cit.* No. 12.





SOCKBURN : PORTION OF CROSS-SHAFT  
(FIRST IN SIXTH ROW).



SOCKBURN : UPPER PART OF CROSS-SHAFT  
(FIRST IN THIRD ROW).



SOCKBURN : STONE WITH TWO WARRIORS ON HORSEBACK (SECOND IN FOURTH ROW).



## ANGLO-SAXON REMAINS

is divided into panels. The upper one is rectangular and is filled with a key pattern, the next has a six-cord plait, and the next a monster with a bushy tail curled over its back and a ball in its mouth. The lowest panel is in the form of a shield ornamented with a key pattern. Between the panels and the angle beads on this side is a band which is split at the angle of each panel and the portions interlocked, thus forming a kind of square-linked chain. The opposite side contains a series of interlaced monsters of intricate form. The side facing north has a combined knot pattern<sup>1</sup> of common occurrence, here particularly well wrought. The side facing south has a knot pattern similar to one which occurs at Gainford and other places.<sup>2</sup> Near the centre of the length the knot is curiously changed with a special form for one division. The angle beads are a line of barrel-shape balusters divided by narrow bands. Below they become plain and are carried to the centre of each face of the cross in the form of inverted arches, ending in heads, and similar heads are worked where the bands divide the angles.

The next stone, which measures 2 feet 8½ inches by 1 foot 6 inches by 9 inches has a cable moulding at each angle between two beads. The east face contains two incised spirals; their connection with anything else it would be impossible to guess at.

The last of the fixed stones is 3 feet 2 inches high, 12½ inches wide, and 9 inches thick. It is a portion of the upper part of the shaft of a cross, but is without ornament.

Lying near the door of the chapel is a flat grave-cover broken into two pieces, 4 feet 4½ inches long, 15 inches wide, and 7 inches thick. It has upon its surface a cross with square terminations to the arms and head; the foot being of an expanded or pyramidal form. A narrow border is carried all round it, beyond which the surface is ornamented in the spaces at the sides of the head, one filled with triquetras, and those at the sides of the shaft with a four-cord plait with divided bands.

The hog-backed stones are an interesting group. The first in the second row is merely a fragment. The next is in two pieces, but is otherwise complete. It has bears at either end, which have all their four paws shown. Along the top is a fret pattern, while each side is ornamented with a four-cord plait. The next has the top broken away. It has bears at the ends, which occupy an unusually large proportion of the surface. Either side contains three panels of four-cord knots. In the base are the semicircular recesses.

The next is almost a replica of that just mentioned, but of somewhat coarser workmanship.

The three stones in the fifth row are of a totally different class. The first is only half of a hog-backed stone. It has a triple ridge and three rows of tegulations on each side, the points of which are of a pointed arch form.

The next is complete and is of similar design, except that the tegulations are of a triangular form. These two have their ends embraced by animals of nondescript form and of very minute proportions when compared with the large bears on the earlier stones.

The last is one of the most remarkable existing examples of this singular class of memorial. It is 5 feet 7 inches long, 1 foot 6 inches high, 12 inches

<sup>1</sup> Romilly Allen, *op. cit.* No. 87.

<sup>2</sup> *Ibid.* No. 141.



## A HISTORY OF DURHAM

thick at the base, and 9 inches at the ends. The top is much broken, but on one side it appears not to have lost much of its original height. In the centre is a human figure, bare-headed and apparently naked, with arms extended. His right hand is in the mouth of a beast, apparently a lion, and surrounding him are other beasts and reptiles, which appear to be attacking him. The other side has a similar central figure, among beasts, which appear to be in a more quiescent state, and possibly represents Daniel in the den of lions.

Among the detached fragments are the heads of three crosses. One of these has the interrupted circle connecting the arms. The sides have bosses at the centre, surrounding which are interlaced designs of the normal form used for filling the arms. The ends of the arms have the four-cord plaits.

Another is of the patée form; is quite plain, and has the interrupted circle of more pronounced character, extending almost to the extremities of the limbs.

The third is again of the patée form, plain and much decayed, and without the interrupted circle.

The three small fragments are not of importance. One has a dog and part of a human hand: another is a fragment from the top of a hog-back; the last has a cable moulding on one angle. They lie on the sills of the east and west windows of the chapel.

*Staindrop.*—In the church are a few small fragments of sculptured stones which have upon them knot-work designs of a late and poor type, much defaced. One of these is in the foundation of the easternmost twelfth century pier on the south side of the nave, and two are to be seen over the north door.

*Stainton-le-Street.*—The ancient church was entirely removed and a new one built in 1876. Taken from the walls of the old church were a number of stones with pre-Conquest sculpture upon them. Two of these fragments, both belonging to the same cross, were added to the Durham collection, and are here figured. The designs upon it are of some interest, as amongst them is the figure of a man holding a sword pointing downward, which is double-edged with a groove along the middle of the blade. He appears to wear a helmet with a pointed projection in front. He stands under a semi-circular arch which rests on columns with capitals. The most complete side has a key pattern upon it. Another has a four-cord interlaced design. Perhaps the most interesting detail of this stone is the astragal or bead at the angles, which is divided into representations of small balusters. This occurs on a Roman stone in the crypt at Hexham, and in some stones from St. Wilfrid's Church there.<sup>1</sup> There are several stones in the churchyard at Stainton and in the rectory garden. One of those in the churchyard is part of a cross-shaft, 1 foot 3 inches long, 1 foot 2 inches wide, and 1 foot thick. The carving has been chiselled away from one side, but the other three have interlaced designs. One of these designs is of frequent occurrence, and appears at five places in Scotland, and at Jarrow, Aycliffe, Billingham, and Hart, and is No. 7 in Mr. Romilly Allen's *Analysis*.<sup>2</sup> There is also the roughly sculptured base of a cross having the socket for insertion of the shaft. In the garden are three portions of cross-shafts which are partly buried in the ground. Their

<sup>1</sup> A similar design is worked on an altar at Cividale. Cattaneo, *op. cit.* 107.

<sup>2</sup> *Proc. Soc. Ant. Scot.* xvii. 243-268.



SOCKBURN: PORTION OF CROSS-SHAFT  
(SECOND IN SIXTH ROW).



SOCKBURN: PORTION OF CROSS-SHAFT  
(THIRD IN SIXTH ROW).



SOCKBURN: PORTION OF CROSS-SHAFT  
(THIRD IN SIXTH ROW)





## ANGLO-SAXON REMAINS

uninjured sides all contain interlaced designs of somewhat poor and flat character.

*Winston-on-the-Tees.*—In the picturesquely situated church here is the greater part of the centre and side limbs of a cross head. On one side is a circular boss which has had a ring of pellets around it. The arms have two stags facing each other, and below the boss is a dog springing at one of the stags. A line of pellets is carried round the margin of the stone. The opposite side has the remains of a figure, with an object which Mr. Longstaffe conjectures to be a gridiron, and the figure that of St. Lawrence, and quotes a brass matrix of a seal in the possession of Mr. Abbott, of Darlington, marked SAVNCTE LAVRENC.<sup>1</sup> Dr. Haigh considers the object to be a chair or seat on which the figure is resting, and compares it with a similar object on one of the Sandbach crosses in Cheshire.<sup>2</sup> The pellets in the margin are repeated.

### SUNDIALS

The county of Durham presents an interesting series of early sundials, the only one of which now *in situ* is probably the oldest. This is on the south side of the nave of the ancient church at Escomb. It is in the south wall, placed centrally from east to west, but at a considerable height, at the level of the heads of the two original windows. The stone on which the dial is cut is 2 feet 4 inches long and 1 foot 6 inches high. The dial itself is much less than these dimensions, and is defined below by a semi-circular raised bead, while above it is encompassed by a serpent in relief, with the head to the west touching the base line of the stone. The tail is of that curious expanded form which appears on the serpents on the Monkwearmouth doorway.<sup>3</sup>

The dial is divided into four parts by incised lines, and the hole for the gnomon remains. Above it is a carved head projecting from the wall, which is probably also *in situ*.<sup>4</sup>

*Chester-le-Street.*—There is a fragment here measuring 13½ inches by 9½ inches and 4½ inches thick, with slightly more than half of a semicircular dial indicated by incised lines. A horizontal line defines the diameter of the semicircle, and two parallel lines its circumference. The area has been divided into ten unequal portions. The mid-day line and that three divisions from it have a distinguishing mark in the form of a small semicircle crossing the lines where they end on the circumference.<sup>5</sup>

*Darlington.*—Here there is a stone with a dial cut on either side of it. The slab is broken, but appears to have been 2 feet square and 5½ inches thick. It was used as the sill of an aumbry, but is now detached and preserved in the church. It is described by Dr. Haigh in these words: 'The half quarter lines, not reaching to the centre, and the six concentric circles, seem to invest it with a character of its own; but I believe those only were designed for use which are joined to the tide marks—to define the length of the mid-day shadow at the solstices and equinoxes; the others are merely ornamental additions. A mark will be observed, though almost effaced, something like the rune Dæg, in the same place as the Swastika at Aldborough,

<sup>1</sup> *Arch. Æliana*, vi. 24, with lithogram (*sic*).

<sup>3</sup> *Building News*, Nov. 28, 1879.

<sup>5</sup> Similar marks occur on dials at Inniscaltra and Kilcummin.

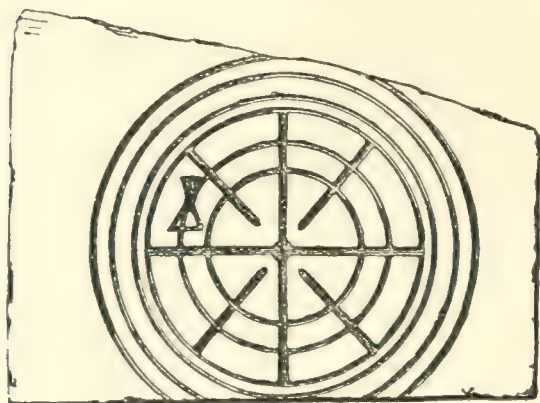
<sup>2</sup> *Ibid.* 62.

<sup>4</sup> *Illus. Archæologist*, i. 228.

Haigh, *Yorks. Arch. Journ.* v. 156.

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indicating the dæg-mæl point—sun in E.S.E. Not one of the divisional lines is quite accurate; least so are those above the equinoctial.<sup>1</sup> The side here



SUNDIAL AT DARLINGTON.

shown was the one noticed by the Rev. J. T. Fowler in 1863. The other, since brought to view, has eight concentric circles and the rune, in much the same position.

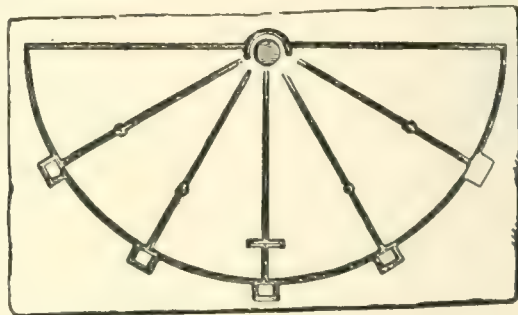
*Hamsterley.*—In the 'church there is a circle with a central hole, but no hour lines.'<sup>2</sup>

*Hart.*—A fine example is here built into the west wall of the nave. It is cut on a slab 1 foot 6 inches by 11 inches; all the lines are raised in semi-circular section,  $\frac{3}{8}$  of an inch

high, and divide the semicircle into eight parts. The hole for the gnomon remains. There are no distinguishing marks on the dividing lines.

*Middleton St. George.*—An early dial is here built into the south wall of the Early English church.

*Pittington.*—The dial here figured is at Pittington Hallgarth. It is manifestly of an early date, and is thus described by Dr. Haigh:<sup>3</sup> 'It exhibits six divisions of day time. It will be observed that the mid-day line has a cross-bar; that each of the lines between it and the equinoctial has a dot at about two-thirds of its length; and that those and the mid-day line have each a little square at its extremity. This is a very remarkable feature. I think it will be admitted that we have here a reminiscence of a fashion of dialling (of which the Wallsend example is a relic) in which the trine marks were blocks of stone arranged in a circle round the gnomon.'



SUNDIAL AT PITTINGTON.

*Staindrop.*—In the wall to the north of and above the chancel arch is rather more than half of an early dial. It is upside down. The semicircle is divided into four, and is circumscribed by a raised bead. Curiously, the field is not left flat, but is worked with a rise towards the gnomon, the hole for which remains.<sup>4</sup>

<sup>1</sup> *The Book of Sundials* (enlarged ed. Eden and Lloyd, 1900), 53; *York. Arch. Journ.* v. 154.

<sup>2</sup> *Book of Sundials*, op. cit. p. 53.

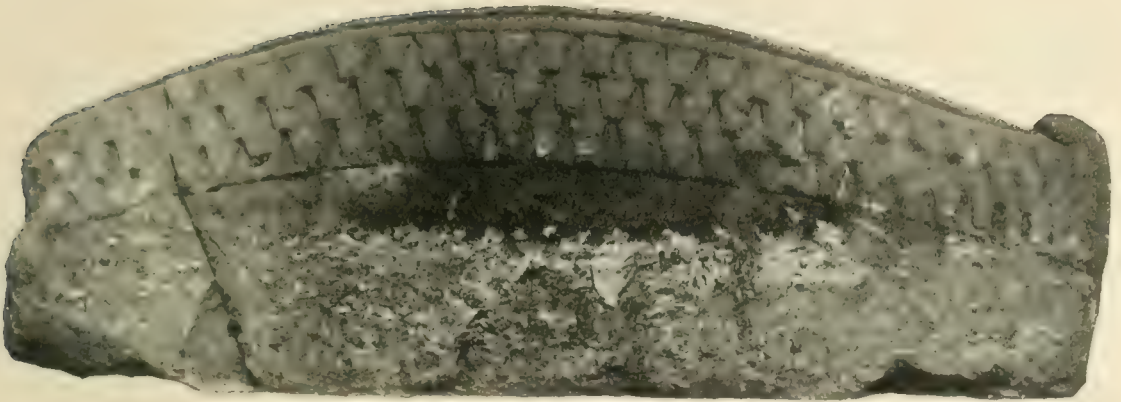
<sup>3</sup> *Ibid.* 206-7. Pl. iii. at p. 144; *Trans. Dur. Northumb. Arch. Soc.* iii. 29.

<sup>4</sup> Rev. H. C. Lipscomb, *Staindrop Church and Monuments*, Pl. opp. p. 3; Rev. J. F. Hodgson, in *Trans. Dur. Northumb. Arch. Soc.* iii. 76 n.





SOCKBURN : HOG-BACKED STONE.



SOCKBURN : HOG-BACKED STONE.



SOCKBURN : HOG-BACKED STONE.





# THE CONTENTS OF ST. CUTHBERT'S SHRINE

PRESERVED IN THE DEAN AND CHAPTER LIBRARY,  
DURHAM

When St. Cuthbert died on that Farne Island which is now called the 'House Island,'<sup>1</sup> on 20 March, 687,<sup>2</sup> he closed a life of pain and suffering ;<sup>3</sup> yet his body had no rest, for it now began a wandering period which lasted, with intervals, till the precious burden finally reached Durham in 995.

How old he was when he died will never be exactly known. He had been a monk since 651,<sup>4</sup> and we are told that he was admitted as such 'ab incunte adolescentia.'<sup>5</sup> Latin dictionaries tell us that 'adolescentia' begins at 14, lasting to 28. If so, assuming his age on taking the vows to have been 15, he would be about 51 at his death. It is not likely that he was much older than this ; a man of delicate frame and uncertain health, who lived an unwholesome life, ill-fed, recluse, emaciated—how could he attain to what we now call old age ? In fact, at 51 or 52 he was already old, bowed down with premature feebleness. It is true that Symeon of Durham tells us of a vision in which a Durham cleric saw SS. Cuthbert and Oswald in the cathedral, and that the former was 'ætatis mediæ vir' ;<sup>6</sup> yet his infirmities had made him old before his time ; and he died worn out by austerities and suffering.<sup>7</sup>

The Lindisfarne Monks, remembering how he had consented to allow his body to rest with them, would not leave it where he died, but brought him reverently to Holy Island ;<sup>8</sup> here they placed him in a stone cist, already conveniently lying there, covered him with vestments and wrappings, and buried him under the pavement of their church, on the south side of the altar.<sup>9</sup> Here he rested eleven years, till 698.<sup>10</sup> At that time, says Bede, 'the divine dispensation' was minded to let the world know how glorious Cuthbert was after his death, and therefore moved the brethren to disinter his remains. To their reverent amazement they found the body still incorrupt. They invested him with new robes, given by Bishop Eadbercht, and placed him in a new wooden coffin, which they had

<sup>1</sup> See R. Surtees, *Hist. and Antiq. of County Palatine of Durham*, i. 5 note.

<sup>2</sup> On the same day as his friend, the anchorite Herbert. Bede, *Hist. Eccl.* lib. iv. cap. xxvii.

<sup>3</sup> Bede, *Vit. Cudb.* cap. xxvii.

<sup>4</sup> When he entered Melrose, having seen a vision of St. Aidan. See *Vita Anon.* sec. 8 (printed in *Beda Op. Hist. Min.*, rec. J. Stevenson, Engl. Hist. Soc.) and *Symeon of Durham* (Rolls Series), i. 21.

<sup>5</sup> Bede, *Hist. Eccl.*, lib. iv. cap. xxv.

<sup>6</sup> *Sym. Dur.* (Rolls Series), i. 102. See also *ibid.* i. 104, 231, 232.

<sup>7</sup> Bede *Vit. Cudb.*, cap. xxxvii.

<sup>8</sup> Bede *Hist. Eccl.*, lib. iv. cap. xxvii.

<sup>9</sup> *Sym. Dur.* (Rolls Series), i. 35.

<sup>10</sup> Bede, *Hist. Eccles.*, lib. iv. cap. xxviii.

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previously prepared and adorned with carving; in this they left him unburied on the pavement of the south side of the altar in their sanctuary.<sup>1</sup>

This new coffin of 698 is the chest of which Durham Cathedral still possesses many interesting fragments.<sup>2</sup> It is no marvel that a thin, attenuated frame, like that of St. Cuthbert, resisted decay, and remained, to the wonder of mankind, as a 'corpus incorruptum' for ages.<sup>3</sup>

Here the body lay undisturbed till the northern invaders began to threaten the coast. At first the south of England had offered more temptations; yet Northumbria was nearer home, and Lindisfarne was specially attractive; there was easy access to it, and for those who had the command of the sea it was an excellent resting-place before or after invasions. It had, too, a monastery tempting for plunder. So after taking York in 867, the Danes pushed up northwards by land. Though checked awhile by the Tyne, their advance soon went on again, till in 875 Haldene threatened Lindisfarne.<sup>4</sup> The bishop and monks were powerless; they gathered up their cherished relics, placing in St. Cuthbert's wooden coffin (as Simeon of Durham tells us)<sup>5</sup> the head of St. Oswald the king, some bones of St. Aidan, and remains of past bishops of Lindisfarne. With these they crossed to the mainland, and the long wandering began. Their drifting movements brought them at last to the mouth of the river Derwent in Cumberland,<sup>6</sup> where Workington now stands. There they shipped the coffin, with a copy of the four gospels on the saint's breast, on board a little sailing vessel, and set out for Ireland. A storm arose before they had gone far, and they were driven towards the Scottish side of the Solway Firth; here, in the tossing of the boat, the MS. went overboard. They then abandoned the attempt to cross to Ireland, and landed on the Scottish coast. Three days later the MS. was found on the sands at Whithern in Galloway, at low tide. This relic of St. Cuthbert still exists in safe keeping in the British Museum.<sup>7</sup> Wandering began again: in 883 they were at Crayke in Yorkshire; thence Guthred, who had been made king of Northumberland through a vision of St. Cuthbert, invited them to return to the north. They set out, and found a home at Cuneacestre (*i.e.*, Chester-le-Street), of which place Eardulf, the last bishop of Lindisfarne, became bishop. The Northumbrian king bestowed on the saint 'all that land which lies between Wear and Tyne,' the cradle of the later magnificent Palatine principedom. Here it was that king Athelstan made to St. Cuthbert many splendid gifts; among them, apparently, the Winchester stole and other fine stuffs, which still remain to us.<sup>8</sup> Here St. Cuthbert's body remained till 995, when a fresh invasion caused it to be once more removed.<sup>9</sup> It was taken by Aldhun, last bishop of Chester-le-Street, to Ripon, and tarried there from spring to autumn. Then, peaceful days intervening, it was brought northwards again, the bearers aiming at either Chester-le-Street or Lindisfarne. But marvellous guiding led them to a desolate site, the strong peninsula of Dunholm, where Aldhun built a little wattle church to shelter the saint and his treasures;<sup>10</sup> we are told that a

<sup>1</sup> *Ibid.*, *Hist. Eccles.*, lib. iv. cap. xxviii.

<sup>2</sup> Of this there can be no question. See *Sym. Dur.* (Rolls Series), i. 249, and Haverfield and Greenwell, *A Catalogue of the Sculptured and Inscribed Stones in the Cathedral Library, Durham* (Durham, 1899), 134.

<sup>3</sup> There are well known instances of bodies drying up without decay, *e.g.*, that of Charles I.

<sup>4</sup> *Sym. Dur.* (Rolls Series), i. 56.

<sup>5</sup> *Ibid.* i. 57.

<sup>6</sup> *Ibid.* i. 63 seq.

<sup>7</sup> *Ibid.* i. 66 and 67 note.

<sup>8</sup> *Ibid.* i. 75.

<sup>9</sup> *Ibid.* i. 78 seq. and ii. 136.

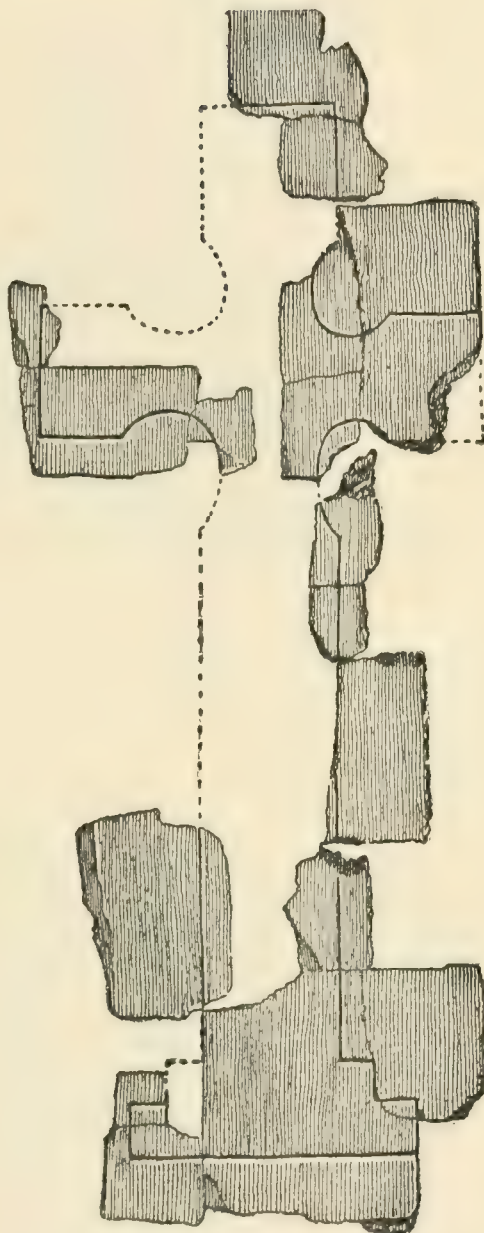
<sup>10</sup> *Ibid.* i. 79.



# THE CONTENTS OF ST. CUTHBERT'S SHRINE



ST. CUTHBERT'S COFFIN : OUTER LID.



ST. CUTHBERT'S COFFIN : INNER LID.



ST. CUTHBERT'S COFFIN : FRAGMENTS OF WOOD SHOWING ARCADING.

## A HISTORY OF DURHAM

larger building, called the White church, followed soon ; and finally a stone church was erected into which, in 998, the saint's body in the ancient coffin, with the other relics, was reverently brought, and deposited in the place of honour.<sup>1</sup> Here, save for a year of panic in 1069-1070, when the body was taken to Lindisfarne on the approach of William the Bastard,<sup>2</sup> St. Cuthbert has ever since rested in safety.

Durham cathedral cherishes many relics of the saint ; and these we will briefly describe, beginning with the coffin of 698.

### THE COFFIN OF ST. CUTHBERT

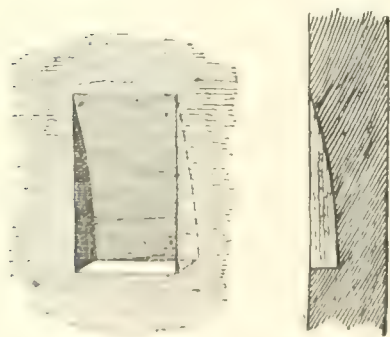
No contemporary account exists of the carvings<sup>3</sup> on this remarkable relic. They are inaccurately described, towards the end of the twelfth



ST. CUTHBERT'S COFFIN : MODEL RESTORED.

century, by Reginald, a Benedictine of the Durham House.<sup>4</sup> Reginald perhaps confused the figures on the wooden chest with the embroidered or woven work still to be seen on the robes in which the saint's remains were wrapped.<sup>5</sup>

The outer coffin of St. Cuthbert<sup>6</sup> is of oak ('de quercu nigra,' says Reginald), not shaped specially to carry a body, but a nearly rectangular oblong, a little wider at the head than at the feet. The measurements of it are, length, 6 ft. 8 in. ; breadth (at the head), 1 ft. 5 in. ; (at the feet), 1 ft. 4 in. ; and depth 1 ft. 5½ in. Originally it had two lids, the inner lid apparently supported by cross-pieces which rested in grooves in the sides of the coffin. A false bottom was added in 1104 to keep the other bones clear of the saint's body.<sup>7</sup> The two lids, the four sides (two long and two short)



ST. CUTHBERT'S COFFIN : GROOVES FOR CROSS-PIECES SUPPORTING THE INNER LID.

alone have work on them, chiefly, though perhaps not altogether, by one

<sup>1</sup> *Sym. Dur.* (Rolls Series), i. 82.

<sup>2</sup> *Ibid.* i. 100, and ii. 189.

<sup>3</sup> The anonymous author in the *De miraculis et translationibus*, printed in *Sym. Dur.* (Rolls Series), i. 229, gives no account of the carvings when the coffin was seen in 1104.

<sup>4</sup> Reginald of Durham, *Lib. de admirandis Beati Cudb. virtutibus* (Surtees Soc., vol. i.). The chapters xl. to xliii. are given in the Appendix to Raine's *St. Cuthbert* (Durham, 1828).

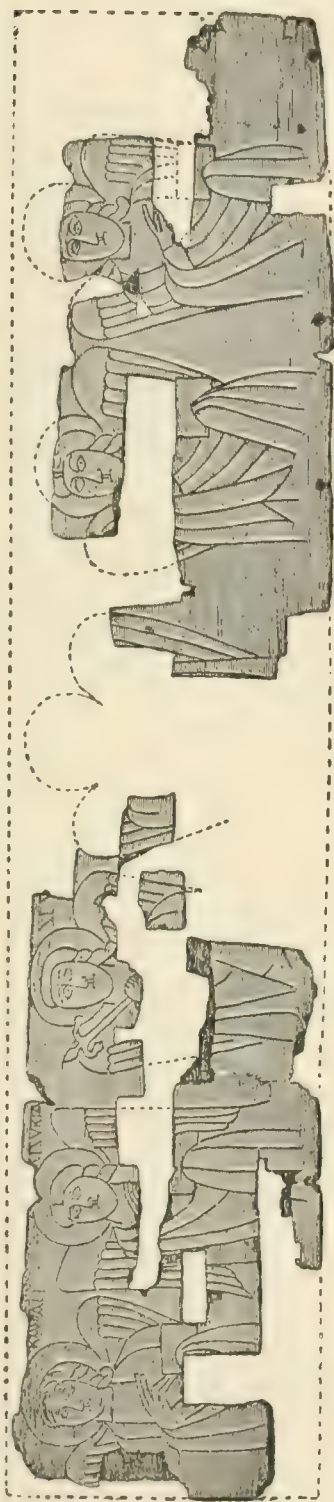
<sup>5</sup> *Reg. of Durham*, cap. 43. He speaks of 'beasts, flowers, and images.' The coffin has the symbols of the Evangelists, the lily of Gabriel, and many figures.

<sup>6</sup> See the account in Havenfield and Greenwell, *Catalogue of the Inscribed Stones in the Cathedral Library*.

<sup>7</sup> *Reg. of Durham* (Surtees Soc., vol. i.).



ST. CUTHBERT'S COFFIN : LEFT-HAND SIDE.



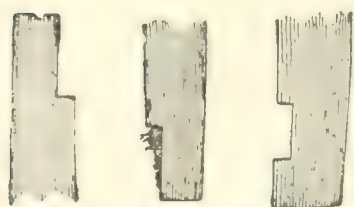
ST. CUTHBERT'S COFFIN : RIGHT-HAND SIDE.



## A HISTORY OF DURHAM

hand. The designs were incised in the wood with a fine knife or chisel which made V-shaped grooves; sometimes a small gouge was used to make softer and rounded lines. No traces of either of the two bottoms of the chest remain. The carvings are a remarkable example of early Anglian work; they are executed with a freedom and accuracy of stroke which tells us that the artist was a master in his simple art. There is no hesitation in the work, no second cut, no slip over the grain, no sign of weakness in it or note of indecision.

The bottom was fitted to rebates in the sides, and to grooves in the ends, and the sides were also rebated to take the ends, and all parts of the coffin were held together, as Scandinavian work still is, with wooden pegs;<sup>1</sup> of these several remain. With the saint's body were stored, at various times, miscellaneous remains of north country saints,<sup>2</sup> collected for the most part by Elfrid Westoue, sacrist of the cathedral, early in the eleventh century.<sup>3</sup> Elfrid was wont to travel up and



ST. CUTHBERT'S COFFIN: GROOVE  
AND REBATES.

down the north, an ecclesiastical bagman trafficking in relics, which he placed in wealthy churches. As he distributed them he took toll of them, and reverently deposited his prizes in Durham Cathedral, and chiefly in St. Cuthbert's shrine.<sup>4</sup> He shamelessly stole from the monks of Jarrow all that portion of Bede's skeleton which still reposes in a later tomb in the Galilee of the Cathedral.<sup>5</sup>

No coffin, except that of 698, seems ever to have been used for the remains; Reginald of Durham, describing the events of 1104, says that the coffin, 'externally carved with very marvellous graving,' was the original chest prepared by the Lindisfarne monks. On cleaning the fragments of this coffin which had been left since 1827 in one of the library cupboards, it was found (as had been noticed by Mr. Raine) that there were runes as well as Roman lettering over the figures; the workmanship of both alphabets is the same.<sup>6</sup>

The outer lid of the coffin has, in the middle, the figure of our Lord, standing bare-footed, holding the Gospels with His left hand under His robe; the book, like the seventh-century Evangelistaries still preserved in the Cathedral library, is nearly square; the right hand is on the breast, apparently (though the wood is broken here) not raised in blessing. This figure, alone of all, has curled hair on both sides of the face. He is specially marked, as is also the Christus in the Virgin and Child, with a cruciferous nimbus; He wears a robe reaching to the ankles. Above His head to the left is a winged man or angel, symbol of St. Matthew; to the right is the winged lion, signifying St. Mark; under his feet are St. Luke's bull and the eagle of St. John. The names of Matthew, Mark, and John are in runes.

Of the inner lid, which could be lifted by two iron rings, one of

<sup>1</sup> Haverfield and Greenwell, *Catalogue*, 139.

<sup>2</sup> At the flight of 875 many precious relics were taken. *Sym. Dur.* (Rolls Series), i. 57. In 1104 only the head of St. Oswald was allowed to remain. *Ibid.* i. 255.

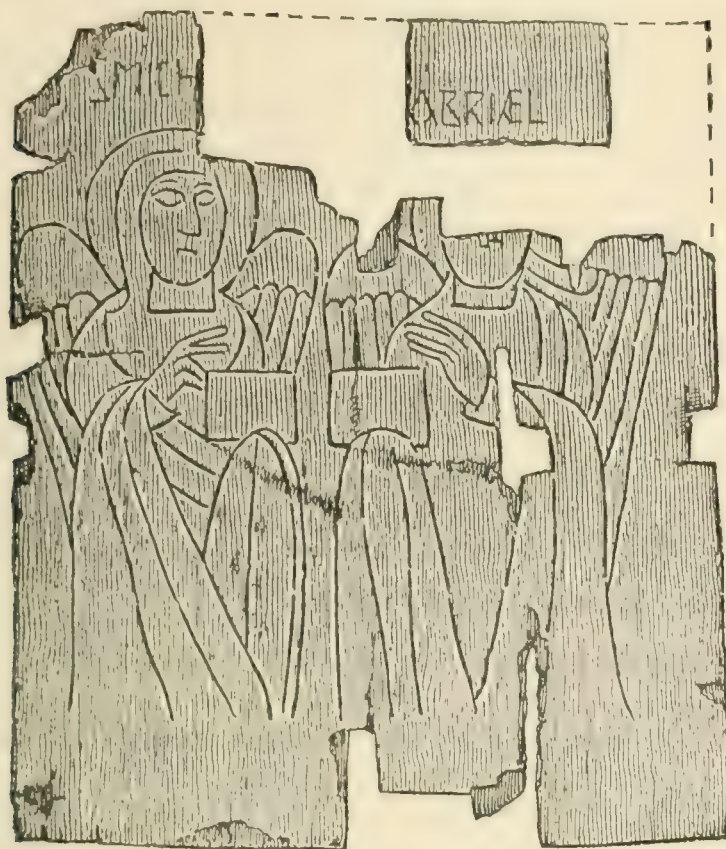
<sup>3</sup> *Ibid.* i. 87.

<sup>4</sup> 'cum patris Cuthberti corpore.' *Ibid.* i. 88.

<sup>5</sup> *Ibid.* i. 88, and *Reg. of Durham* (Surtees Soc. i.), cap. 26.

<sup>6</sup> See Haverfield and Greenwell, *Catalogue*, 152, and plates at the end.

# THE CONTENTS OF ST. CUTHBERT'S SHRINE



ST. CUTHBERT'S COFFIN : HEAD WITH FIGURES OF ST. MICHAEL  
AND ST. GABRIEL.



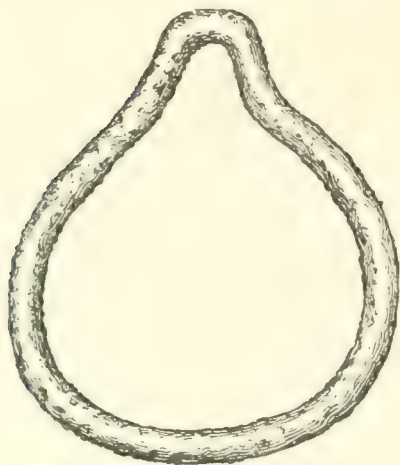
ST. CUTHBERT'S COFFIN : FOOT WITH FIGURES OF VIRGIN AND CHILD



## A HISTORY OF DURHAM

which still remains, only a few fragments are left. 'They are enough to show that it was inscribed with a simple cross on two steps.'<sup>1</sup>

The right side of the coffin is inscribed with six archangel figures, simple and somewhat monotonous in pose; they also all have the right hand on the breast, with variations in the fingers; their left hands all carry books, with the hand under the robe. There is one variation; the Archangel Gabriel holds in his right hand the traditional lily. Their hair is all curled, and carried down on to the left shoulder only. The names Raphael and Uriel alone remain.<sup>2</sup>



ST. CUTHBERT'S COFFIN: IRON RING.

The left side of the coffin contained, in a double row, fourteen figures, the twelve Apostles, together with St. Paul and (probably) St. Barnabas. Twelve figures now remain, in whole or in part. These are treated much in the same way as the Archangels. St. Peter comes first, with the double keys. There are slight variations here also in the fingers on the breast, and St. Paul is specially distinguished by a beard, while he has no flowing hair at all. There was room for two more figures at the end, but this portion of the plank is altogether lost.<sup>3</sup>

The larger end, at the head, has two Archangels—Michael and Gabriel. To give a kind of composition to the piece, Gabriel carries his book in his right hand.

Lastly comes, at the foot, the most interesting of the series—the very naïve and simple representation of the Virgin and Child.<sup>4</sup>

This portrayal of the Virgin and Child, carved about 696,<sup>5</sup> is among the earliest Western examples of a subject destined to become so common afterwards in religious decoration. The infant Christ is not blessing; in His left hand He holds a kind of roll, perhaps to indicate the Gospel message; His nimbus is cruciferous, while that of the Virgin is plain. She wears a dress with closely-fitting sleeves, and her right hand is laid across the knees of the Christ, the fingers of the left hand just show on His shoulder.

These remnants (with a half-sized model of the coffin) are preserved in the Cathedral Library. If it seems wonderful that in the seventh century, on a far away island, such work was possible, it should be remembered that these Anglian monks took their inspiration and learning from the Irish Christians, who have left us splendid examples of their skill both in calligraphy and in illumination. One needs no better examples of their art than the *Evangelistary* of St. Cuthbert, now in the British Museum; it is a very fine specimen of the work of the Lindisfarne monks of this period. In fact, as Dr. Greenwell tells us, they felt, together with their missionary fervour, a deep devotion to the learning and art of the West,

<sup>1</sup> See Haverfield and Greenwell, *Catalogue*, 155.

<sup>2</sup> The others are certainly Gabriel, who holds the lily, and probably Michael, as he appears alone with Gabriel on the larger end of the coffin. For the other two there is choice between Chamial, Zadkiel and Jophiel.

<sup>3</sup> See Haverfield and Greenwell, *Catalogue*, 149.

<sup>4</sup> What is left of the 'Maria' is in Roman character, the 'Jesus Christus' in runes.

<sup>5</sup> He was buried in 698, but the coffin had probably been prepared before this.



# THE CONTENTS OF ST. CUTHBERT'S SHRINE

(I) ES MICHAEL

(IV) AR

ABRIEL

IHS XPS

(II) PHILIPPI

(V) PETRVS

MARCVS

JACOBVS

LVCAS

IOHANNIS

ANDREAS

ANDREAS

(III) RAPHAEL

(VI) PVS BAR

SCS VRIA

THOMAS

SCS

DA

VMIA

MATHEA

## INSCRIPTIONS ON THE COFFIN

(I) Head : [S]cs Michæl, [G]abriæl. (II) Outer lid : Matheus, Marcus, Lucas, Johannis. (III) Right side : Raphael, Scs Uria[l], Scs. . . . ., [Ch]umia[l](?). (IV) Foot : [M]ar[ia], IHS XPS. (V) Left side, upper row : Petrus, Jacobus, Johannis, Andreas. (VI) Left side, lower row : [Philip]pus, Bar[tholomeus], Thomas, Pa[ulus], Matheæ.

## A HISTORY OF DURHAM

touched with Irish influences; they aimed by simple piety and consecrated skill to impress the facts of the Christian faith on the simple Northumbrians.

A large number of fragments of wood, found with the coffin, await arrangement. One series, when put together, forms an arcade of semi-circular arches; it may be part of the outer case mentioned by the anonymous writer in the Bollandist *Acta Sanctorum*, as existing at the time of the translation in 1104. Or it may have been made at that time.<sup>1</sup> Other pieces of mouldings may belong to the coffin of 1542.

### THE BODY OF ST. CUTHBERT

Whether or no Durham Cathedral is still in charge of the genuine remains of St. Cuthbert is a question that has often been discussed with some unnecessary warmth. We shall find that very little certain evidence is to be had; the question rests on circumstantial arguments, and these always leave things in some doubt. This case, however, is one in which the balance of probabilities will be found to strengthen the belief that the bones found in the Cathedral in 1827, and seen again in 1899, are those of the saint. The contrary view can neither be proved nor disproved. The statement that the Benedictines of the Cathedral House removed the saint and concealed him in some other part of the Cathedral, while they substituted for him the bones of a monk taken from the 'Centry Garth' hard by, is still often made. It is said that between 1537 and 1542 St. Cuthbert's body was reburied somewhere near the west end of the Cathedral, and that either 'St. Cuthbert's treasure' or his body, or relics of him, (for all these phrases are used of it) formed a secret and a mystery which at the time of the Reformation was entrusted to three Benedictines; and that these brethren, whenever one of them died, appointed another; and that thus the secret has been faithfully kept from the sixteenth century to our days.<sup>2</sup> The three are well known in the Benedictine Order. Sir Walter Scott in the early part of last century, when visiting Mr. Surtees at Mainsford, often came over to Durham, and must have heard this tradition; for he refers to it in the well-known lines of *Marmion*:—<sup>3</sup>

He chose his lordly seat at last  
Where his Cathedral huge and vast  
Looks down upon the Wear.  
There deep in Durham's gothic shade  
His relics are in secret laid,  
But none may know the place,  
Save of his holiest servants three,  
Deep sworn to solemn secrecy,  
Who share that wondrous grace.

This is the Benedictine tradition.

The 'secular tradition' is found in a MS. of the seventeenth century, which was in Archbishop Eyre's hands in 1867; it is also in a paper in

<sup>1</sup> Haverhill and Greenwell, *Catalogue*, 155.

<sup>2</sup> Those interested in the subject should read Rev. W. Brown, *Where is St. Cuthbert Buried?* (Durham, 1827); Monignor Eyre (Archbishop of Glasgow), *The History of St. Cuthbert* (London, 1887); Canon Fowler's *Acta*, i. 18, 19; and Raine, *St. Cuthbert* (Durham, 1828).

<sup>3</sup> Scott, *Marmion*, ii. 14.

## THE CONTENTS OF ST. CUTHBERT'S SHRINE

the handwriting of Bishop Maire (1725–1766).<sup>1</sup> These two papers state definitely that the precious treasure is the body of St. Cuthbert; they say that it lies under the second and third steps of the staircase leading to the Bell Tower, and one of the MSS. adds that it was near the great clock. When this became known to the Chapter in 1867 a large and thorough investigation took place, both near the staircase leading to the great clock in the south transept, and also at the stairs in the north-west tower which flanks the west end of the nave, a tower in which some of the bells were formerly hung. Nothing was found in either place. On the other hand the Benedictine tradition points to some spot in the western part of the nave, not far from the font.<sup>2</sup> These traditions may now be left while we consider the chief matter—that is, the probability that the body was not removed, and that the bones now lying in the vault of 1542 in the platform behind the Neville screen are the actual remains of St. Cuthbert. The known history of this body is short. Three commissioners<sup>3</sup> of Henry VIII., probably in 1537,<sup>4</sup> going their rounds in search of Church treasure came to the Cathedral. We are told that the chest containing the saint's body was broken into by a goldsmith with a great hammer, and that in so doing the man broke one of the saint's legs. After this the remains were deposited for some time in the Revestry<sup>5</sup> of the church 'till such time as they did further know the king's pleasure'.<sup>6</sup> It was during this period that pious monks are said to have carried the body away, substituting for it a skeleton taken from the Centry Garth. We have two accounts by eye-witnesses of the burial of the ancient coffin with a body in it; those who saw it detected no change. The bills for making the vault and for carrying out the burial are still in the Cathedral Library.<sup>7</sup> The body was laid in an ordinary vault; and into the walls of it were built the blue stones or 'marble' as they are commonly called, which had been at the base of the destroyed shrine.<sup>8</sup> Over the body they first placed a large slab on which was engraved in bold lettering the name of 'Ricardus Heswell, Monachus,' who had been buried in the Centry Garth in the fifteenth century; and above this, on the surface, a large blue marble ledger stone without inscription. The marks of the feet of earlier worshippers may still be plainly seen on both sides of this slab.

Here the coffin lay undisturbed till 1827. Then the Chapter ordered investigations. In the broken coffin they found the bones closely wrapped in ancient robes, among which were discovered several valuable relics of St. Cuthbert, which had escaped the keen eyes of the commissioners. These things answer to certain of the treasures enumerated at the opening which took place in 1104.<sup>9</sup> Mr. Raine,<sup>10</sup> an eye-witness in 1827, who unfortunately

<sup>1</sup> Both are quoted in *Arch.* lvii. (i.) 17, 18.

<sup>2</sup> See *Rites of Durham* (Surtees Soc. cvii. 102).

<sup>3</sup> Pulled down in 1802.

<sup>4</sup> *Durham Account Rolls*, iii. 742 (Surtees Soc., xcix–cii.).

<sup>5</sup> *Sym. Dur.* (Rolls Series), i. 252, 253: Abbot Richard, of St. Alban's (1097–1119), was present at the

translation of 1154, and the account of the event given by Matthew Paris is important. Abbot Richard had a withered arm, which was miraculously restored by touching St. Cuthbert's body. The account is as follows:—While the holy and undecayed body of the said Confessor was being lifted by the head and feet to be transferred (to the new shrine), and was bending in the middle and threatened to collapse, Abbot Richard, who was standing by, marvelling that it was flexible as though the saint were merely asleep, sprang forward, and casting away his crozier, supported the body by the middle in his arms; and straightway the arm which before had been useless was restored entirely by the touch of the holy body. From this it seems clear that the saint was taken out of his coffin in the process.—*Vitae Viginti Trium S. A. Abbatum* (ed. Watts) 1006.

<sup>10</sup> Raine, *St. Cuthbert* (Durham, 1828).

<sup>6</sup> *Ibid.* 19.

<sup>7</sup> *Ibid.* 284.

<sup>8</sup> *Rites of Durham* (Surtees Soc., cvii. 103).

<sup>9</sup> *Arch.* lvii. (i.), 14, 16.



## A HISTORY OF DURHAM

infused far too much local feeling and prejudice into his descriptions, enumerates no less than six coverings or wrappings: on the outside a fine linen sheet, well waxed; then a somewhat thin and delicate robe of silk, with the figure of what he styles an Anglo-Saxon knight on a ground of amber and ornamental parts of leaf-gold; thirdly, a robe of thick soft silk, with 'St. Cuthbert's birds'—the eider ducks, and other things woven into it; fourthly, an amber silk robe; then for fifth and sixth coverings, two more silken robes, one of purple and crimson, the other of damask, also of the same colours.<sup>1</sup> In the midst of these wrappings (under the three upper ones) lay hidden the remarkable 'Cross of St. Cuthbert'; there were found also the remains of a portable altar, an ivory comb, and the beautiful tenth-century stole, etc., of Bishop Frithstan of Winchester. There was also a ring, commonly called St. Cuthbert's ring; this, however, is not earlier than the thirteenth century; it is kept with great honour at Ushaw.

After all that seemed valuable had been removed to the Cathedral Library and the fragments of the coffin had also been stored away in a cupboard, the remains were placed in a rough box of deal planks carelessly put together, and again buried in the vault.

When in 1899 Dr. Greenwell<sup>2</sup> had undertaken to piece together, so far as was possible, the fragments of the coffin, he asked leave to have the vault re-opened to see whether any bits of carved work had been thrown back into it in 1827. Some few portions, all small, of the carved wood were found and fitted into their places; the most of the wood was either in minute fragments or in dust. In other respects the re-opening was of value.<sup>3</sup>

Though the coffin of 1827 had broken asunder under the pressure of rubbish over it, the bones of the chief body were found arranged loosely in their natural order. There was also a second skull resting on the saint's arm, that of St. Oswald. On examination of the bones there was found remaining on them throughout portions of ligaments and considerable remains of the 'periosteum membrane,' a kind of skin which enwraps the bones and is so delicate of texture and substance that it rapidly perishes if exposed to damp earth or to the moisture of ordinary decay.<sup>4</sup> This fact, to which two qualified anatomists testified, at once disposes of the suggestion that this skeleton had been taken out of the Centry Garth by the monks; for the monks' burial-yard was damp, and bones lying there could not have retained this delicate membrane. It is most improbable too, that when such a substitution took place the valuable vestments and other wrappings should have been left, six deep on the body; or that they should have failed to secure the cross or the ancient comb and the most interesting portable altar. At any rate, the fact is that the position of the cross found under three of the wrappings is a direct proof that these had never been disturbed.<sup>5</sup>

Then it was observed by Canon Fowler that in one of the eye sockets of the skull was a something of which he says, 'I could distinguish not only the exsiccated muscles diverging from a point at the back, but the circular form of the iris, and the rows of the roots of the eyelashes . . . . I have

<sup>1</sup> Raine, *St. Cuthbert* (Durham, 1828), 194.

<sup>2</sup> Haverfield and Greenwell, *Catalogue*, 133-156.

<sup>3</sup> See *Arch. Ivii.*, (i) 11. Canon Fowler was present, as also the writer of this article. <sup>4</sup> *Ibid.* 20.

<sup>5</sup> All these were found in 1827. *Reginald of Durham* (Surtess Soc., i.), c. 41, mentions a gold fillet, and Raine says there were traces of a mark that might have been left on the skull by contact with gold.

## THE CONTENTS OF ST. CUTHBERT'S SHRINE

no doubt that it was a shrivelled eyeball, including the lids.'<sup>1</sup> If this is so, it is surely a strong confirmation of the original drying up without decay of the 'corpus incorruptum.'<sup>2</sup> When the bones were laid out for us and counted up, before being deposited in the new oaken coffin, it was found that only one important member was missing, one of the thigh bones; this may be the 'leg' which was broken by the goldsmith with his hammer. Dr. Selby Plummer<sup>3</sup> says that 'the partially worn though otherwise perfect condition of the teeth, the conditions of the lower jaw, the partial ossification of the larynx, the comparative thinness and lightness of the scapulæ, warrant us in assigning the age of their owner as of about fifty-five years of age,' which also corresponds closely enough to what we know respecting St. Cuthbert's age at his death. Perhaps the most striking confirmation of the relation between this skeleton and the original records is this; in Bede's *Life of St. Cuthbert*<sup>4</sup> we are told that after a great crisis the Saint recovered his health, save that a tumour which had been external then 'took an internal direction and troubled him all the rest of his life.' For when the bones were examined by us we saw in the breast-bone a well-marked deep hole which had been eaten out by a long and obstinate tumour; over about half the mouth of this hole a piece of bone had grown, showing that much time had elapsed during the progress of the malady. Dr. Plummer also adds that on this bone 'were many perforations, due to some ulcerative process.'<sup>5</sup> In many ways it is probable that St. Cuthbert was a great sufferer throughout his life; and the skeleton answers exactly to the descriptions of the ancient records, which show us a man old before his days, oppressed with ill-health, and of a consumptive tendency. And finally, contemporaries tell us that St. Cuthbert was 'neither very tall nor very short,' and the skeleton as we carefully measured it was about five feet eight inches long.<sup>6</sup>

These are cumulative probabilities which incline the mind towards a belief that we have here the remains of St. Cuthbert. Future discovery, or, it may be, the revealing of the Benedictine secret, may compel us to think otherwise; as it is, the sum of proof is strongly in favour of the genuineness of the remains, though proof positive is wanting.

### THE HEAD OF ST. OSWALD<sup>7</sup>

The history of this relic is briefly this: After the battle on the Maserfield in 642 in which the King fell,<sup>8</sup> his remains were brutally treated by Penda, the triumphant pagan king of Mercia; his head was stuck up on a pole; King Oswio later on took it down.<sup>9</sup> He carried it to Lindisfarne, where it was received as a most precious relic. When the monks were forced to take flight thence in 875, they tell us that they placed the head in St. Cuthbert's coffin,<sup>10</sup> and William of Malmesbury adds that 'the head is said to be held between the arms of the ever blessed Cuthbert.'<sup>11</sup> In the translation of 1104 it is said that the head was restored to its place by the

<sup>1</sup> *Arch.* lvii. (i), 21 note, but see Raine, *St. Cuthbert*, 214.

<sup>2</sup> *Ibid.* 20.

<sup>3</sup> *Ibid.* 23-24.

<sup>4</sup> Bede, *Hist. Eccl.*, lib. iii. cap. ix.

<sup>5</sup> *Sym. Dur.* (Rolls series), i. 57.

<sup>6</sup> Cap. 8.

<sup>7</sup> See Reginald of Durham (Surtees

<sup>8</sup> *Ibid.* 23 note.

<sup>9</sup> *Arch.* lvii. (i), 20.

<sup>10</sup> Soc. i.), cap. 42.

<sup>11</sup> *Ibid.* cap. xii.

<sup>12</sup> *Ibid.* i. 53.



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side of St. Cuthbert.<sup>1</sup> This skull shows proof of such a violent death as befell St. Oswald in the battle of Maserfelth.<sup>2</sup> It has a tremendous cut on the skull, which must have killed him, inflicted by a sharp sword or axe; and there is also a second wound on the head,<sup>3</sup> perhaps inflicted after death, when Penda savagely wreaked his anger on it.

### THE CROSS

This ancient and most interesting relic was found in 1827 under three thicknesses of silk on the skeleton. It is of gold with four equal arms; of a type of workmanship well known to be that of the seventh century, as may be seen by comparison with other and dated pieces of jeweller's work in France or Belgium. In the centre it has a large reddish stone, or possibly a substitute in glass for a garnet, and under this a cavity which probably contained a relic. There is a corresponding stone in each angle and twelve smaller stones on each branch. One of the limbs has been broken off and riveted on again in early times: it has a ring through which a gold chain was passed. This ring is of much later workmanship; and under it may be discerned a thin loop in gold wire worn through and replaced.

The inner ornament is not enamel: it is formed of some quasi-mosaic pieces of stone or glass set in a thin edging of gold.

The discovery of this cross, hidden away for ages (for Reginald of Durham, in his minute description of the contents of the coffin, does not mention it), provides one of the strongest confirmations of the genuineness of this skeleton. It points to a high probability that the inner vestments, etc., were never disturbed till 1827;<sup>4</sup> and it is evident that if they were left untouched the remains within them could not have suffered a secret translation.

### ST. CUTHBERT'S COMB

The anonymous author writing of the translation of 1104 says that the monks then replaced by the side of St. Cuthbert's body 'a great ivory comb,' and Reginald of Durham<sup>5</sup> says 'The comb is perforated in the middle so that almost three fingers may be inserted into the hole. The length of it bears a suitable proportion to the breadth. For the length is almost equal to the breadth, save that for ornament there is a slight difference. From lapse of time it has got a reddish tinge; the whiteness of bone which naturally belongs to it is changed into a ruddy tint.' This comb was found in 1827 lying among the folds of one of the uppermost robes, on the lower part of the saint's breast. On careful examination the comb was found to be certainly ivory, not wood; it has been skilfully fastened together again, for it was very fragile and much broken. It does not appear to have been originally buried

<sup>1</sup> It is fair to add that there is a skull at Epternach, an Anglo-Saxon settlement in Luxemburg, which is said to be St. Oswald's head. See Bede (ed. Plummer), ii. 157.

<sup>2</sup> Ibid. *Sym. Dur.* (Rolls Series), i. 255, and *Bede*, op. cit., lib. iii. c. 9.

<sup>3</sup> *Arch.* lvii. (i), 25.

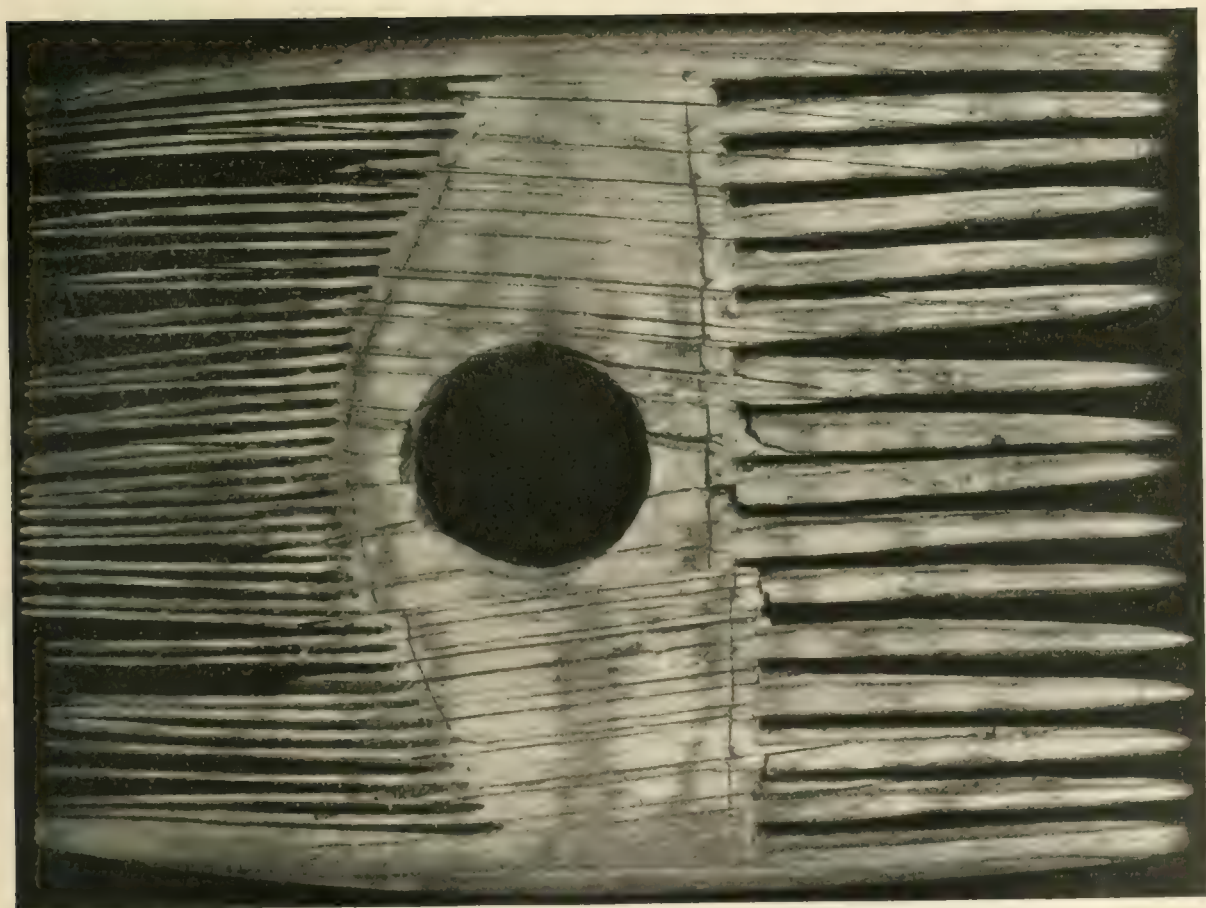
<sup>4</sup> 'The outside robes' were removed at the translation of 698, but 'quæ carni illius proxima aderant prorsus tangere timebant.'—*Sym. Dur.* (Rolls Series), i. 36. 'Then "involutum novo amictu corpus, novaque in theca reconditum, supra pavimento sanctuarii posuerunt."—Bede, *Hist. Eccl.*, lib. iv. cap. xxviii. Some robes were taken away and others added in 1104.—*S. D.* i. 255.

<sup>5</sup> *Reginald of Durham* (Surtees Soc.), i. cap. 42.





ST. CUTHBERT'S CROSS ( $\frac{1}{1}$ ).



ST. CUTHBERT'S COMB ( $\frac{1}{1}$ ).



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with the saint; we hear of it for the first time in the account of the doings of Sacrist Elfrid, son of Westoue, about 1022, who made a new comb for the saint's body, which is probably the comb now preserved in the Library.

### THE PORTABLE ALTAR

Of all the relics the most puzzling is this altar, on which there is an undecipherable inscription. It is simply an oaken board covered with silver, forming a flat plate or tablet about five inches broad and four inches and a half high. On this the elements were placed for consecration.

It is mentioned as being in the coffin by the anonymous monk and by Reginald; it is certainly coeval with St. Cuthbert. The oaken board was covered with a too delicate silver plate fastened on by small silver nails. This is unfortunately in a very bad state. Round a circular ornament in the middle ran a bold inscription which has hitherto baffled ingenuity. There exists also on the back of the original oaken slab a seventh-century inscription carved in the wood with a sharp tool. It runs thus:—

IN HONOR(EM). . S. PETRU.

It seems that the carver never thought of putting St. Peter's name in the genitive case, and that it is a kind of 'Lapidary Latin' blunder. Under these words are cut two crosses of unusual shape; they are long and fine, tapering away to a point.

The silver work has been transferred to a new oaken slab. On the front of this portable altar there are many puzzles. In the middle (or nearly in the middle, for it is nearer to one side than the other) is a circular centrepiece with beautifully interlaced work of a very early date—forming perhaps a decorated cross in the middle. There is also a very clear cross half-way up the left side; there is nothing to tell us whether there were any crosses (to make up the symbolic five) on the corresponding places on the other three sides; it looks as if there were not. Each corner is occupied by an interesting ornament, and a fine beading runs all round the plate. The centrepiece had a bold inscription. Mr. Raine says it is Greek in Latin letters; there seems little truth in this statement. Calculating the space and the size of the letters, about six to seven letters are missing at the beginning of the inscription and about the same number at the end. The letters remaining are only eight in number, with two curled marks between them, which may mean abbreviations for *m* or *iam*; but it is more likely that they are simply divisions between the words. Outside the central boss there are, at the top, two very plain letters, O H. The letters which remain are fairly clear, excepting the first, which was so near destruction that it has suffered damage. Indeed, the first and second letters may be read either as a double I (there is such a letter on the back of the original slab); or they may be a U or a V; they may also be such an N as we see on the back; they might, but not probably, be part of an H. Earlier in the inscription there is apparently the lower part of an O, with room for about two letters between it and the double I.

Reproducing the letters as we have them, they run thus:—

..... O ..... IIA?EE ?ERA .....



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There is no sign, as Raine would have it, of a Greek  $\Gamma$  at the beginning, nor of a  $\kappa\alpha\iota$ , nor is there any 'et.'<sup>1</sup>

### BISHOP FRITHSTAN'S STOLE AND MANIPLE

The history of these rare and beautiful specimens of early needlework, now about a thousand years old, and still almost as bright as they were when they passed out of the artists' hands, is happily preserved for us on the work itself. For both the Stole and the Maniple bear the inscription 'Pio Episcopo Friðestano,' as well as the name of the giver, 'Ælflæd fieri precepit.' Frithstan was Bishop of Winchester from 909<sup>2</sup> to 931, when he resigned; he died in 933. He was a man of much piety, and became a local saint. Ælflæd was the second wife of Edward the Elder,<sup>3</sup> and died not later than 916.

This, then, gives a proximate date for this beautiful piece, and the place also where it was worked. It was probably the work of the ladies of the new Nunminster of Winchester, under guidance of Queen Ælflæd, as a tribute of their affection for the saintly bishop.

Soon after Frithstan's death, King Athelstan, son of Edward (though not by Queen Ælflæd),<sup>4</sup> was called up to the north, and as he passed through Chester-le-Street<sup>5</sup> he worshipped at the shrine of St. Cuthbert,<sup>6</sup> and presented to the saint 'a stole and maniple'<sup>7</sup> which St. Etheldreda gave to St. Wilfrid in a small chest,' as we are told in the enumeration of relics.<sup>8</sup> Reginald of Durham also, speaking of the year 1104, says that 'he was decorated with a stole and fanon . . . . their inner portions are hidden under the tunic and dalmatic, but the extremities (which are in sight) appear to be of most costly workmanship.'<sup>9</sup>

The stole, which is now in five pieces, has kept much of the brilliancy of the gold thread, and shows very skilful handling throughout. The groundwork is of thread of gold—'real gold thread' (Mr. Raine says), not silver-gilt; the figures and ornaments, inscriptions, etc., have been worked in with the needle on spaces left for them; the border on either side is woven.

Of the stole the middle point is occupied by a quatrefoil enclosing the Lamb of God with a nimbus. It bears also the inscription 'Agnus Dei.' From this the figures descend to right and left, each with its own inscription, in letters scattered on the ground so as to avoid a stiff scroll; the whole stole is decorated with full-length figures of the prophets of the Old Testament: Isaiah, Jeremiah, Daniel, Amos, Obadiah, Hosea, Joel, Habakkuk, Jonah, Zechariah, one whose name is lost, and, lastly, Nahum. On the front of one of the ends is a half-length St. John the Evangelist, and at the back 'Ælflæd fieri precepit,' and on the other end a half-length figure of St. Thomas with, on the reverse, 'Pio episcopo Friðestano.'

The maniple is in similar work, though the details differ. In the middle, here also, there is a quatrefoil in which is worked by the needle a

<sup>1</sup> See Raine, *St. Cuthbert*, 201, 202, particularly the plates at the end of the volume.

<sup>2</sup> *Angl. Sax. Chron.* gives date 932 as the date of his death, but see *Sym. Dur.* (Rolls Series), ii. 124.

<sup>3</sup> *Flores Hist.* (Rolls Series), i. 478.

<sup>4</sup> *Ibid.*

<sup>5</sup> The shrine was there from 833 to 995.

<sup>6</sup> *Sym. Dur.* (Rolls Series), i. 75.

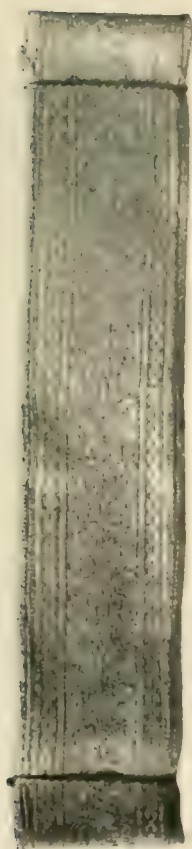
<sup>7</sup> *Ibid.*, i. 211.

<sup>8</sup> *Durham Account Rolls* (Surtees Soc.), ii. 433.

<sup>9</sup> *Reg. of Dur.* (Surtees Soc. i.), cap. xli.



ST. CUTHBERT'S PORTABLE ALTAR (1).



BRACELET OF GOLD THREAD  
AND RED SILK FOUND IN  
ST. CUTHBERT'S COFFIN (1).



PORTION OF MANIPLE FOUND IN  
ST. CUTHBERT'S COFFIN (1).





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hand outstretched from a cloud, with the inscription, 'Dextera Dei.' On the one side is Pope Gregory the Great in act of benediction, and below him his companion Peter the Deacon ; under these the maniple ends with a square containing a half-length figure of St. John Baptist, with a second 'Pio episcopo Friðestano.' On the other half there is St. Sixtus the Pope, and beneath him Lawrence the Deacon ; and on the square end is, on the front, a half-length figure of St. James the Apostle, with again the inscription 'Ælflæd fieri precepit.' At each end of the maniple there hangs a fringe of crimson or purple.

There were also found, a part of Athelstan's gift, a girdle and two bracelets in similar work, but without figures.<sup>1</sup> A second maniple of a later date was also discovered.

### PIECES OF SILK CLOTH

In addition to the Frithstan vestments, the Library has also some remarkable fragments of those five silk-woven pieces of ancient work, which have been photographed full size and painted by hand by Mr. T. J. Williamson ; they can be studied at South Kensington. The careful reproduction is more distinct than the fragmentary and faded remains themselves, though preserved with great care at Durham. That there is anything left to us is really due to the infinite painstaking of Dr. Greenwell, the Cathedral Librarian. In this, as in many another case, he has enormously enriched the Library by his skill, knowledge, and devotion to antiquity. It has always been said that the scenes of the Saint's life are here brought in—the sea, the eider-ducks, or the solan geese, the porpoises, the rabbits ; these, it was thought, proved 'that the silk had been woven for St. Cuthbert' and at Lindisfarne. It is far more probable that these incomparable fragments were presents brought from the East, from Persia perhaps, or Syria, or from orientalised Sicily. It is, most probably, Persian work of the eleventh century. One knows how intimate was the intercourse between East and West in old times ; and the texture and manner of ornament is not western, but oriental.

1. The largest piece remaining is in thick soft silk. It appears to have been a square, some part of the edging of it being still there ; the general effect of colour, though much faded, being purple and crimson. The pattern of this piece is chiefly confined within a circle of about two feet in diameter, with a bordering in the circle of grapes and conventional leaves with pears, or more probably mangoes, in couples, and other eastern fruits ; at the top are 'golden apples,' *i.e.* oranges. The interstices between the repetitions of the pattern are filled up with two geese (or more probably ducks) pecking at bunches of grapes which fall from a vase or bracket standing on a pedestal. Inside the circle, for nearly one-fourth of the height, is the sea, wherein swim six fishes, and four ducks float on the water. Arising out of the sea between the birds the upper part of the circle is filled with what may have been meant for a great vase, standing on a base which rests on the sea ; or it may perhaps be a conventional boat, with high ends rising almost to the top of the circle and crowned with two large ornaments of pine-apple form. Much of the space between these points is unhappily lost ; there is enough to show

<sup>1</sup> *Sym. Dur.* (Rolls Series), i. 211.

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that it was filled up with a bunch of oranges, with foliage above, and an ornamented belt of embroidery running from one side to the other and ending in tasselled flowing folds gathered together on the outside. If it is a vase, the base of it is easy to make out, though there seems to be no top to it. The colours of this piece have been most brilliant.

2. This is the most curious piece. It covers a large surface and the subject is repeated. There is in the middle a large circular plate with eight lobes, and between the outer and inner borders a pattern which looks at first sight rather like an oriental inscription, though it is nothing but ornament. Inside this border is a horse and his rider. The horse is unconventional, but drawn naturally; it has trappings and hanging bells, its tail is tied up, and on a saddle with stirrups the rider sits holding the reins in his right hand; both reins are on the right side of the horse's neck; the bit is a kind of muzzle, on, not in, the mouth. On the rider's left wrist a hawk is perched with wings extended and a long, broad tail. The bird's head is distinctly hawk-shaped. Under the horse is a very well-designed dog of the greyhound or 'whippet' type. The man wears no armour nor any sword; he sits looking out full face, with a peaked beard.<sup>1</sup> The ground of the silk is *parsemé* with conventional oriental flowers and cypress trees such as one sees on a Persian carpet to this day. The whole piece has a double border composed of two lines of rope or chain with a succession of identical stiff ornaments; beyond this border comes a row of well-drawn rabbits, and beyond this a fringe or braid of the same colour fastened to the silk by the needle. This striking pattern of man, horse, falcon, and dog, in a circular lobed cartouche, is twice repeated.

3. A piece of silk, still of most brilliant colouring, mostly crimson and purple. Above these seems to have been an urn, now only indicated, supported by two face to face winged beasts, lions or griffins, whose heads are gone. In this piece the main figure, repeated thrice on the portion of stuff preserved, is a two-headed peacock, standing in front of the spectator, with the eyes and brilliant colours of his tail filling up all the space behind him.

4. The next fragment is a piece of silk, with a cruciform pattern often repeated, in the same purple and crimson colours.

5. And lastly a silk piece of little ornament; it is amber coloured and so arranged that the threads of it appear to give alternately a light and a dark tint, so creating a kind of wavy look on the surface. This piece was bordered by a ribbon of thick lace rather more than an inch in breadth with a pattern woven on it, very like, as Mr. Raine says, the 'Coach-lace' of his time.<sup>2</sup>

Of these coverings of the saint's body some were certainly added in the days of Reginald of Durham. He minutely describes the robes which were then taken away and replaced by choicer work in still finer silk. It is these substituted pieces that are preserved and carefully treasured in the Library of Durham Cathedral.

<sup>1</sup> In the church of St. Pol de Batz (an island off the north-west coast of Brittany) the writer discovered a fragment of very ancient needlework with this same subject treated in a similar way. It is said to be a part of the famous stole of St. Pol, with which the saint led a wicked and hungry dragon to its death. Be this as it may, the work is very ancient and curious; the curé of the parish said that the embroidery was oriental. The St. Pol horseman rides a horse with hardly any trappings; the bridle is treated in the same way, without a bit; but the dog, instead of being a tiny 'whippet,' is a huge boar-hound. The most remarkable point about the Batz figure is the fact that the feet of the horse are *toed* very distinctly; the horse itself is better drawn than ours; otherwise, the subjects are identical. St. Pol was a Celtic priest who had crossed over from western England to Brittany in the sixth century.

<sup>2</sup> Raine, *St. Cuthbert*, 196.





PORTIONS OF BISHOP FRITHSTAN'S STOLE ( $\frac{1}{2}$ ).



ENDS OF BISHOP FRITHSTAN'S STOLE ( $\frac{1}{2}$ ).

BISHOP FRITHSTAN'S  
MANIPLE ( $\frac{1}{2}$ ).





# BOLDON BOOK

THE record known as Boldon Book affords the elements of a picture of the social and economic conditions of the bishopric of Durham at the close of the twelfth century, which, although it may not be complete, will, as far as it goes, be accurate. The nature and contents of this document have not always been correctly described. It has been an accepted commonplace to say that Boldon Book is the Domesday of the palatinate ever since Sir Henry Ellis printed the record among the appendixes to the official edition of Domesday Book. And yet this saying is far from representing the actual state of the case—would, indeed, that it did so. Boldon Book approaches more nearly the type of a rental or extent than that of a survey<sup>1</sup> in the sense in which the word is used in connexion with Domesday Book, and although it appears to describe itself as a survey, it is in reality no more than a polyptichum designed to meet the administrative needs of a great estate. It is not even what we might under the circumstances have hoped for—a chartulary. The antiquity of the see and the peculiar position of the bishop, which was already passing from landlordship to sovereignty,<sup>2</sup> made the preparation of a true chartulary at once difficult and superfluous. The ‘patrimonium Sancti Cuthberti’ was already formed and organized, and the traditional record of it preserved in the Durham Chronicle and a few forged charters.<sup>3</sup> Moreover, since the great re-adjustment at the close of the eleventh century, by which a convent of monks was introduced into the cathedral church and the endowment of the see divided between them and the bishop<sup>4</sup>—the appointment, as they would have said across the Channel, of a ‘mensa episcopalis’ and a ‘mensa capitularis’—there was none to bring the bishop’s rights seriously into question. The far-off royal government was destined not to molest him for two centuries to come, and then the bishop would have his answer ready, a warrant better than Warenne’s rusty sword, and yet consisting essentially of general words which, by exception, would succeed in ousting the king. So the legal side of Boldon Book is scarcely apparent, and its economic side consists of what is rather a report on the conditions of a great estate than the survey of a county. Still it may be fairly assumed that what went on in the bishop’s vill was equally going on in those of the prior or the lay barons, and that Boldon Book therefore affords enough material for a number of generalizations with regard to what we may call the Third Estate of the bishopric at the close of the twelfth century. Something may be said as well about the social superstruc-

<sup>1</sup> ‘Fecit Dominus Hugo Dunelmensis Episcopus in presentia sua et suorum describi omnes redditus totius Episcopatus sui assisas et consuetudines, sicut tunc erant et ante fuerant,’ *Boldon Book* (Surtees Soc.), p. 1.

<sup>2</sup> Lapsley, *Co. Pal. of Dur.* chs. i. ii. v.

<sup>3</sup> *Symeon of Durham* (Rolls Series), 2 vols.; *Liber Vitæ Ecclesiæ Dunelmensis* (Surtees Soc.); and Canon Greenwell’s valuable discussion of the subject in *Feodarium Prioratus Dunelmensis* (Surtees Soc.) (henceforth *Feodarium*), pref.

<sup>4</sup> Greenwell, *loc. cit.*

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ture—but here we shall get small help from Boldon Book, and must proceed cautiously by means of inference and analogy, making use of the meagre supply of documents at our disposal. It will be convenient, then, to proceed from the bottom upward, to study and classify the information that Boldon Book affords before attempting to supply that which it withholds.

To this end we may begin with the organization of the agricultural community. It is desirable here to fasten our attention on the vill rather than the manor, for our interests are economic rather than legal, and the question of the formation of the manors of the bishopric is very largely a legal one. Still it is a matter which we cannot afford to neglect, and it may be well to interrupt our main inquiry at this point in order to ask ourselves what was the meaning of the word 'manor' in the bishopric, and how the thing which the word represents came into being. The Domesday manor was far less definite and regular an institution than that of the fourteenth century, but whatever the manor of the eleventh and twelfth centuries may or may not have been, one point is clear, its constituting element was the vill. Either the manor composed itself of vills or else it decomposed vills into manors. In a general way the first of these processes is characteristic of the north of England, the second of the south.<sup>1</sup> The vill is an institution more permanent and more stable than the manor. It is older withal, and stands in a closer relation to the land and its inhabitants.

With this statement of the general difficulties of the case we may turn to examine the particular problem presented by Boldon Book and the other evidence at our disposal. Briefly it may be stated on this wise, how and when were the bishop's vills grouped or arranged in those economic and judicial units styled manors? Since the bishopric was omitted from the Domesday survey and not afterwards included in the regular administration of the kingdom, whether judicial or financial, it will be seen that any argument drawn from the fiscal or administrative purpose of the Domesday survey will not necessarily fit our case. Nor, as we have seen, may we argue as though Boldon Book, in respect to its aim and result, were on all fours with Domesday Book. The chief aim of the Conqueror's inquest was to facilitate the collection of danegeld, a tax that was not raised in the bishopric of Durham,<sup>2</sup> and the two documents are separated by a century which saw the lapse and disappearance of that impost. We must seek, then, some other explanation; we are debarred from assuming that it was financial pressure that grouped men and lands about some house which was responsible to the king for his geld.<sup>3</sup>

We may conduct our inquiry most conveniently by observing the now classical method of proceeding from the known to the unknown. The known in this case consists of the rich series of episcopal halmote rolls which begin in the year 1345.<sup>4</sup> These documents record the doings of those local

<sup>1</sup> Pollock and Maitland, *Hist. of Eng. Law*, 1st ed. i. 597, 598.

<sup>2</sup> Leakey, *Co. Pal. of Dur.*, 295, 296.

<sup>3</sup> This convenient hypothesis, put forward by Professor Maitland (*Dom. Book and Beyond*, 128), is not generally accepted, see Tait in *Eng. Hist. Rev.* 1897, 770 ff.; Round in *ibid.* 1900, 293 ff.; and Vinogradoff, *The Growth of the Manor*, l. c. iii., particularly pp. 300 ff.

<sup>4</sup> These MSS., which are preserved at the Record Office and at Durham, were thoroughly examined by Mr. H. G. L. Page, on behalf of the Ecclesiastical Commissioners, with whose permission they have very kindly placed at my disposal several volumes of transcripts. For the convenience of those who wish to verify statements occurring in the text I give the references to the originals.



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tribunals which we are accustomed to think of as manorial courts, but it is very noticeable that the word 'manor' does not occur in them until the Middle Ages are past. They begin normally with the formula 'Pleas of the halmote of A, held at such a place on such a day.' All the halmotes of the bishopric were held by the bishop's steward, either in person or by deputy,<sup>1</sup> who for this purpose made a circuit, called the 'turnus halmotorum,' three times a year. The court was ordinarily held at a certain vill about which a number of others were grouped. This arrangement is extremely important for our purposes, and will presently be considered in greater detail when we deal with the matter in its economic aspect. At present it should be remarked that for judicial purposes the arrangement was very elastic. Thus in the pontificate of Bishop Hatfield (1345-1381) there are three instances of the halmote of Sadberge being held at Stockton.<sup>2</sup> This is particularly striking, for Sadberge had, as we shall presently see, a greater unity than any other subdivision of the episcopal estates. Then in Bishop Skirlaw's time (1388-1405), the court of the Middleham group was held sometimes at Middleham and sometimes at Sedgefield, another member of the same group.<sup>3</sup> In the eleventh year of the same pontificate the halmote for four villis belonging to the Easington group was taken at Sadberge.<sup>4</sup> Twice in the same pontificate Durham, usually grouped with Chester, was taken at the court held at Easington.<sup>5</sup> These appear to be the only cases of such redistribution in the fourteenth century, but there are numerous instances of it in the records of the fifteenth and later centuries. In the fifteenth century, indeed, there is a striking case of a single court being held for all the bishop's villis.<sup>6</sup> Finally, the records of all these transactions were returned into the bishop's chancery, where they were engrossed and became part of the official records of the whole palatinate. Now the obvious inference from all this would be that the bishops were dealing with their villis as members of one vast manorial estate, or let us say rather of a great franchise which was manorial in so far as its proprietor exercised rights of landlordship over certain parts of it. But no sharp line, it would seem, was drawn between the exercise of these rights and those of a political and administrative character in virtue of which the bishop enjoyed his regality. But things can not always have been in this condition. Several considerations enter into the account, and we must try to discover at what time and under what circumstances the bishop became the landlord of the villis in question, whether there was not some economic reason for their arrangement in the way we have seen, and how they were administered before the development of the complicated palatine judiciary.

Before dealing with these questions we must follow the fortunes of the word 'manor' in connexion with the villis of the bishopric. In the survey made by Bishop Hatfield at the close of the fourteenth century,<sup>7</sup> we find that villis are grouped not in manors but in wards, a term which commonly answers to the hundreds and wapentakes of other counties.<sup>8</sup> Still within

<sup>1</sup> Lapsley, *Co. Pal. of Dur.* 78; *Dur. Cursitors Rec.* No. 42, m. 1. Rec. Off.

<sup>2</sup> *Ibid.* No. 12, fols. 121, 129d, 182d.

<sup>3</sup> *Ibid.* fol. 291d.

<sup>4</sup> *Ibid.* No. 16, fol. 252.

<sup>5</sup> *Ibid.* No. 13, fols. 14d, 124d.

<sup>6</sup> *Ibid.* No. 13, fols. 354, 396.

<sup>7</sup> *Hatfield Surv.* (Surtees Soc.), 1857.

<sup>8</sup> In the general receiver's roll of Bishop Fordham (who succeeded Hatfield) the onus of every ward is given followed by the quota of the villis comprised in the ward, the manorial arrangement appearing only from the order in which the villis are enumerated. *Ibid.* 260-275.

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these four wards the arrangement of the vills corresponds to that of the halmote rolls, and as we shall see presently to that of Boldon Book as well. The term 'manor,' however, occurs in Hatfield's Survey, where it is applied to single vills held by free tenants, and seems to be equated with 'villa'. Thus at Easington under the rubric 'Liberi Tenentes' we read 'Walterus de Edirdacres tenet manerium de Edirdacres per certa servitia.'<sup>1</sup> On turning to Hutton we find under the same rubric the following entry: 'Henricus de Essh tenet villam de Huton . . . per servitium forinsecum.'<sup>2</sup> The next document in chronological order is the great receipt roll of Bishop Beck, the earliest account roll of the palatinate that has survived to us.<sup>3</sup> This records the issues of the bishop's manors and accounts for receipts from manorial bailiffs and for the expenses incident to holding the 'turnus halmotorum.' Then there is the long series of the prior's halmote rolls, beginning in 1296,<sup>4</sup> and these again avoid the term 'manor,' although they show a judicial organization practically identical with that of the bishop's vills. Then quite early in the thirteenth century we get in the record of the testimony taken in a great law-suit a mention of a manor belonging to Bishop Philip (1197-1208).<sup>5</sup> And it is recorded that on the resignation of Bishop Nicholas de Farnham in 1249 the manors of Stockton and Easington were assigned to him for his support 'cum omnibus eorundem maneriorum membris, pertinenciis et libertatibus.'<sup>6</sup> This is particularly interesting because Stockton and Easington were the heads respectively of two of those halmote groups which we shall have presently to examine. Finally, if we turn to the national records we shall see that the king's officers had no difficulty in finding manors in Durham. After the death of Bishop Pudsey in 1195 the keepers of the temporalities accounted for the tallage of the manors of the bishopric, but, as appears from the detailed list which follows, the money was raised from the vills individually and not in manorial groups.<sup>7</sup> Again, in the earliest extant pipe roll the keepers in like manner are accounting for the cost of stocking the bishop's manors and for certain manorial profits which seem to have been the result of a tallage.<sup>8</sup>

Yet in spite of all this the word 'manor' does not occur in Boldon Book;<sup>9</sup> the vill was the unit of the survey, and in like fashion the division of St. Cuthbert's patrimony between the second Norman bishop and the monks was made on a basis of vills, and not manors.<sup>10</sup>

What then shall we say? That the manor did not exist in Durham in the twelfth century? But there was something that the king's officers treated as a manor, and the manor was not unknown in the next century. We cannot on the other hand suppose that the manor, as the term was understood throughout the kingdom, was to be found in the bishopric. For

<sup>1</sup> *Hatfield's Surv.* (Surtees Soc.), 127.

<sup>2</sup> *Ibid.* 153.

<sup>3</sup> Printed in *Boldon Book* (Surtees Soc.), App. pp. xxv-xxxix.

<sup>4</sup> *Dur. Halmote R.* (Surtees Soc.), 1889.

<sup>5</sup> *Attestaciones Testium*, etc., in *Feod.* 224.

<sup>6</sup> From a document issued by a papal commission composed of three English prelates, in *Historiæ Dunelmensis Scriptores Tres.* (Surtees Soc.), 1839, App. No. lix. The local chronicler in recording this transaction mentions the 'maneria episcopalia'; Graystones, vi. in *ibid.* p. 42.

<sup>7</sup> Pipe R. 8 Ric. I. in *Boldon Book* (Surtees Soc.), App. pp. vi. vii.

<sup>8</sup> *Ibid.* 31 Hen. I. in *ibid.* App. pp. i-iii.

<sup>9</sup> The single instance of the use of the term in the Whickham entry is almost certainly no part of the original record, *vid. inf.* App. No. ii.

<sup>10</sup> See Canon Greenwell's instructive account of this transaction in *Feod.* pref. xvi ff.



one thing, the institution that was occasionally called a manor had nothing to do with the bishop's financial administration. To what extent may we regard it as having served administrative and judicial ends?

We have suggested that in the fourteenth century and later the halmote groups in Durham lacked the individuality of the contemporary manor owing to a system of judicial administration which regarded them all as forming part of a single great estate and subject to a single tribunal which, although presided over by a single officer and constituted under a single authority, was for convenience sake held in various places. Now owing to very different reasons something of the same sort may have been true at a much earlier period. The tradition of the formation of the patrimonium of St. Cuthbert is preserved in the eleventh-century compilation known as the *Historia de Sancto Cuthberto*, and the twelfth-century chronicle that goes by the name of Symeon of Durham. Although we must make a large allowance for the bias of these documents, and the fact that they contain only the reflection of vanished grants or instruments, we may still draw from them the main lines of the development. The franchise of the see that was to be Durham began in grants of land in what are now Northumberland and York. The bishop's authority extended itself over the intervening region between Tyne and Tees as forming part of his diocese. To this authority was added, either by prescription or direct grant, some immunity (sake and soke) in the same region. This political power (quite independent of any proprietary right growing out of landlordship) seems at first to have been disregarded by the Danish invaders, and then as they settled and assumed Christianity to have been admitted and even perhaps extended.<sup>1</sup> Meanwhile the bishops seem to have been extending their proprietary rights in the region in question by purchase, perhaps by grant, and further by some form of internal colonization. We get only indirect notice of this last and most important method, but it may fairly be inferred from certain passages in the *Historia Ecclesiæ* and the *Historia de Sancto Cuthberto*. Bishop Egred gave to the see Gainford and its appurtenances from Tees to Wear, 'quarum ipse conditor fuerat,' says Symeon:<sup>2</sup> 'et . . . ædificavit duas villas . . . et dedit eas,' says the *Historia*.<sup>3</sup>

The development of the political side of the franchise has been traced elsewhere.<sup>4</sup> One thing is clear, at the time of the Norman Conquest and probably much earlier the bishops were holding a court, a single court, in which all their judicial business was transacted and which did not begin to develop and subdivide until the second half of the twelfth century. Such a tribunal would have included all those subjected to the bishop's jurisdiction whether for tenurial or political reasons; but until the palatine judiciary began to develop upon the pattern of the royal judiciary this distinction would naturally not be taken into account.

<sup>1</sup> So much we may gather from the obviously legendary transactions ascribed to the Danish Guthred and King Alfred, and from the striking passages in the *Hist. de S. Cuth.* 'Nam Ethred supradictus abbas emit a præfato rege Guthred, et a Danorum exercitu, qui sibi sub eo terram diviserant, has villas . . . et eas Sancto Cuthberto contulit.' 'Eodem tempore Cuthardus, episcopus fidelis, emit de pecunia sancti Cuthberti villam quæ vocatur Ceddesfeld, et quicquid ad eam pertinet, præter quod tenebant tres homines, Aculf, Ethelbriht, Frithlaf. Super hoc tamen habuit episcopus sacam et socnam.' *Symeon of Durham* (Rolls Ser.), i. 207, 208

<sup>2</sup> *Ibid.* i. 53.

<sup>3</sup> *Ibid.* 201.

<sup>4</sup> Lapsley, *Co. Pal.* ch. v.



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It has been argued that the organization and definition of manorial courts was by no means early, but followed and imitated that of the criminal jurisdiction of the sheriff. That originally, in short, there had been but a single court or halmote for all the tenants of the manor.<sup>1</sup> Now if we apply this theory to the bishop's estates which the rapid development of his sovereignty and the machinery for its application in the twelfth century would have left in a direct and proprietary relation to him, and remember the absence in the bishopric of any normalizing fiscal system, we may well regard the episcopal halmote courts as a case of arrested development. The great estate, as apart from the great franchise, would continue, in principle at least, to be administered as a single whole.

Thus in the bishopric the financial force which contributed to the formation of the manor did not exist and the judicial element had been reduced to a minimum. It had, however, a certain importance. In practice it must have been convenient to hold the halmote from place to place on the plan which we have seen was customary in the fourteenth century. Such an arrangement would naturally take account of any pre-existent grouping or arrangement of vills, such as a parent community and its offshoots, or a cluster of intercommoning vills, or the like. Where a court was held for a number of vills that already had some principle of cohesion they would obviously be drawn more closely together, for the business of the halmote was almost as much administrative as judicial, and all sorts of common affairs were regulated there. Then, following the custom of the kingdom, such groups with newly developed or intensified solidarity might in the course of the thirteenth century come naturally if not very accurately to be described as manors.

If this hypothesis prove acceptable, it will still be necessary to account for the economic, as we have endeavoured to account for the judicial, formation of the episcopal manors, to show what earlier element of cohesion had held the clusters of vills together. Here, fortunately, we have rather more material at our disposal. The arrangement, as was natural, seems to have been primarily a matter of vicinity, and this would include of course new vills that sprang up on the waste land surrounding the elder ones. Then, as will presently appear, certain vills were chargeable in pairs or larger groups for services and renders, an arrangement which is in some cases older than the Norman Conquest. Such a condition is quite what we should expect to find when we remember that in the bishopric there was no uniform pressure of taxation, no such fiscal system as was imposed on the rest of the kingdom by the Domesday survey, which, whatever may be the details, must still be regarded as a dynamic process in the formation of the English manor.

This matter may best be illustrated by a comparison of the disposition of the vills in the fourteenth-century manors with their arrangement in Boldon Book.

Houghton Group in Halmote Rolls :—Bishopswearmouth, Ryhope, Burdon, Herrington, Newbottle, Morton, Wardon, Houghton.

Vills in the Boldon Book :—Wearmouth and Tunstall ; Ryhope and

<sup>1</sup> Maitland, *Select Pleas in Manorial Courts* (Selden Soc.), Introd. ; Vinogradoff, *Villainage in England*, 362-376.

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Burdon; Newbottle, Biddick, and Herrington; Houghton, Wardon, and Morton.<sup>1</sup>

Here our test works out very neatly. The vills forming the manor of Houghton follow one another in order in the Boldon survey, moreover they all have some further connexion. Wearmouth, Ryhope, and Burdon, came to the bishop together as part of a reputed grant by King Athelstane.<sup>2</sup> In Boldon Book the vills are arranged in the groups indicated. Wearmouth and Tunstall are surveyed together, work, render, and have their demesne in common; and this is true also of Ryhope and Burdon. The third group is connected by a common pinder and common mills. Wardon and Morton are dependent on Houghton, where they work and with which they have a pinder in common. They all conform, moreover, to the Boldon or cornage-paying type, and fit in therefore with that general classification of vills of which we speak elsewhere.<sup>3</sup>

Easington Group in the Halmote Rolls:—Sherburn, Cassop, Shotton, Shadforth, Easington.

Vills in the Boldon Book:—Easington, Thorp, and Shotton; North Sherburn, Shadforth, Cassop, Trillesden, and Whitwell.

Here again we find an economic connexion between the vills which go to form this manor. Easington, Thorp, and Shotton were grouped as early as A.D. 901, when Bishop Cutheard granted them to Elfred, son of Birihtulfinc, in return for services,<sup>4</sup> and in the Boldon survey they follow one another. The first two are connected by common renders, services, and demesne. The second group is described in Boldon Book as Quarringtonshire, and appears to have an organic connexion. Whitwell would be a new vill erected in this region for its tenant William. In Hatfield's Survey it is being held as a sub-manor by the Master of Sherburn Hospital,<sup>5</sup> and would therefore not be enumerated as one of the bishop's vills in the Halmote Rolls. Trillesden also would seem to be an offshoot or member of Cassop.<sup>6</sup> Finally the whole cluster conforms, as in the case of Houghton, to the Boldon or cornage-paying type.

Chester Group in the Halmote Rolls:—Ryton, Whickham, Whitburn, Cleadon, Newton, Plawsworth, Boldon, Chester, Urpeth, Gateshead, Framwellgate.

Vills in the Boldon Book:—Chester and Urpeth; Gateshead, Boldon, Newton, and Plawsworth; Cleadon and Whitburn; Whickham; Ryton and Crawcrook.

Here the connexion of the minor groups is more apparent than that of the whole. The villeins of Urpeth plough and harrow at Chester, and although the entries are widely separated in Boldon Book, there is no doubt

<sup>1</sup> The manorial grouping as derived from the episcopal halmote rolls is necessarily only approximate, vid. sup. p. 261. I have given what seems to be the most usual or generally recognized arrangement of vills. Cf. *Durham Halmote R.* pref. p. viii ff.

<sup>2</sup> *Syemon of Durham* (Rolls Ser.), i. 211.

<sup>3</sup> There are some apparent exceptions to this. The villeins of Biddick are farming their vill at special terms. Newbottle contains only cottiers and is a member of Herrington. Wardon and Morton in like manner contain only 'firmarii,' and are members of Houghton. I cannot account for the omission of Tunstall and Biddick, both of which are duly recorded in *Hatfield's Survey* (Surtees Soc.), pp. 135, 153. Biddick is there recorded as being held by charter.

<sup>4</sup> *Syemon of Durham* (Rolls Ser.), i. 208.

<sup>5</sup> *Hatfield's Surv.* (Surtees Soc.), 150.

<sup>6</sup> Ibid.



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of the connexion between the two vills, particularly as the mill of Urpeth (which was at farm) occurs immediately after the Chester entry. The second group is more doubtful. If the Newton in question be the Newtona juxta Dunolmum of Boldon Book and Hatfield's Survey, it would be like Plawsworth, which immediately follows it in both records, an off-shoot of Durham. If, however, it be Newton juxta Boldonam, it would be an off-shoot of Boldon, having no connexion with Plawsworth or Durham. Cleadon and Whitburn are connected both in Boldon Book and Hatfield's Survey; they have a common demesne and work and render together. Whickham, Ryton, and Crawcrook follow one another in similar fashion, but Boldon Book places them at some distance from the main group to which they are seen to belong. But the villeins of Whickham did carriage-service between Gateshead and Durham, and Ryton and Crawcrook have the obligation of carting wine in common. Framwellgate, another offshoot of Durham, does not appear in Boldon Book. With this exception, and that of Gateshead, Chester and Plawsworth, where details are lacking, the vills belong to the Boldon type.

Middleham Group in the Halmote Rolls :—Sedgefield, Cornford, Middleham.

Vills in the Boldon Book :—Sedgefield and Butterwick; Middleham and Cornford.

This group presents no difficulties and requires little comment. It was already a great soke in the tenth century when Bishop Cuthbert bought for St. Cuthbert 'Sedgefield and all belonging to it.'<sup>1</sup> Middleham and Cornford, which are surveyed together, follow immediately on the Sedgefield notice in Boldon Book, and although the Butterwick entry stands at some distance, the vill is charged with the service of ploughing at Sedgefield, of which it appears in Hatfield's Survey as a dependent.<sup>2</sup>

Stockton Group in the Halmote Rolls :—Carlton, Hartburn, Norton, Hardwick, Preston, and Stockton.

Vills in Boldon Book :—Hardwick; Norton; Stockton, Hartburn, and Preston; Carlton.

Both Carlton and Norton seem to have formed part of the patrimony of St. Cuthbert.<sup>3</sup> In Boldon Book Stockton, Hartburn, and Preston are grouped; the first two have a demesne in common, and a single pinder serves for all three. Hardwick, on the other hand, stands between Sedgefield and Middleham, but as it is in the hands of a tenant its services are not enumerated, so that we cannot tell what connexion it may have had with the present group, nor determine whether it belongs to the Boldon type to which all the rest excepting Carlton conform.

Darlington Group in the Halmote Rolls :—Cockerton, Whessoe, Haughton, Blackwell, Bondgate-in-Darlington.

Vills in the Boldon Book :—Darlington, Blackwell, Cockerton, Haughton, Whessoe.

This grouping goes back to the alleged grant of Styr son of Ulf, at the end of the tenth century.<sup>4</sup>

<sup>1</sup> *Symeon of Durham* (Rolls Ser.), i. 208.

<sup>2</sup> *Hatfield's Surv.* (Surtees Soc.), 186.

<sup>3</sup> *Symeon of Durham* (Rolls Ser.), i. 215, 220; *Liber Vitae*, 57.

<sup>4</sup> *Ibid.* i. 212.



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The vills of Oxenhall and Little Haughton are connected with Darlington by services which they have to render there, but they do not figure in the Halmote Rolls, although they reappear in Hatfield's Survey, where they are held as sub-manors.<sup>1</sup> The whole group, however, is intimately connected in the general classification of vills and forms, as we shall see, the second or agricultural type.

Auckland Group in the Halmote Rolls :—Ricknall, Middridge, Heighington, Killerby, West Thickey, West Auckland, Redworth, Coundon, Byers, Escomb, East Thickey, Newton Cap, Bondgate-in-Auckland.

Vills in the Boldon Book :—New Ricknall and Ricknall Alia ; Heighington and Killerby ; Middridge and Thickey ; Newton-by-Thickey (West Thickey in Hatfield's Survey) ; Redworth and Old Thickey ; North Auckland, Escomb, Newton, and West Auckland ; Great Coundon, Little Coundon, and Binchester ; Byers.

The grouping of these vills in Boldon Book comes out very clearly. The Ricknalls have a common demesne, but they stand in the Survey between Carlton and Darlington. Heighington and Killerby have the demesne, or at least the hall, in common. Middridge and Thickey have a common demesne and common pasture. Old Thickey, we are expressly told, was made of the land of Redworth. Then North and West Auckland, Newton, and Escomb, form a sub-division known as Aucklandshire, the terms of their tenure are alike, and they have certain obligations in common. The Coundons and Binchester are also connected, the first two by a common demesne, and the last, although separated in the Survey, by ploughing services at Coundon. Byers appears in Boldon Book as an assart held by a free tenant in connexion with the vill of Hunwick. Bondgate-in-Auckland, like the settlement of the same name in Darlington, is later than Boldon Book.<sup>2</sup> All these vills, except Redworth, the Ricknalls, and the Coundons, conform to the Boldon type.

Sadberge Group in the Halmote Rolls :—Sadberge and Newbiggin.

Sadberge was not acquired by the Bishop until after the composition of Boldon Book, and it does not therefore appear in that record. Bishop Pudsey purchased it from Richard I., who had held it as a manor with a wapentake appurtenant.<sup>3</sup> Its manorial organization was therefore complete when it came under the Bishop's control.

Wolsingham Group in the Halmote Rolls :—Stanhope, Lynesack, Bishopley, Bedburn, Witton, Hamsterley, Wolsingham.

Vills in the Boldon Book :—Wolsingham and Rogerley ; Broadwood ; Stanhope.

The case here is curious, for all but two of the vills composing the manor have come into being since the composition of Boldon Book. A little attention to the type of the chief vills gives the explanation. Wolsingham and Stanhope are the typical forest vills, and the manor no doubt grew and increased as more and more forest land was taken under cultivation. In 1183 these vills contained an unusually large number of tenants, who, if they were

<sup>1</sup> *Hatfield's Surv.* (Surtees Soc.), 7, 9.

<sup>2</sup> Canon Greenwell conjectures that the name 'which is not uncommon in some of our older towns, is derived from the bond-tenants living in that street.' *Hatfield's Surv.* (Surtees Soc.), 277.

<sup>3</sup> 'Manerium nostrum de Sadberge cum wapentagio ad idem manerium pertinente,' Cart. Ric. I. in *Scriptores Tres.* (Surtees Soc.), App. No. xl. Cf. Woldingham, cap. ix. in *ibid.* p. 14, and App. Nos. xli. xlii.

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not actually free, still formed no part of the villein community, and paid rent instead of rendering services. Under these circumstances, with an abundance of waste land and a population more readily mobilised than the ordinary villein class, the rapid growth of new vills, which naturally retained a connexion with the parent settlement, is readily accounted for.

Lanchester Group in the Halmote Rolls :—Benfieldside, Billingside, Butsfield, Satley, Broomshields, Kyo, Pontop, Broom-with-Flass, Roughside, Rowley, Lanchester.

Vills in Boldon Book :—Lanchester.

Lanchester, like Wolsingham and Stanhope, was a forest vill, and the same opportunity for growth would exist here as there. These new places are duly recorded in Hatfield's Survey.

Bedlington Group in Halmote Rolls :—Bedlington, East Sleckburn, West Sleckburn, Cambois.

Vills in the Boldon Book :—Bedlington, West Sleckburn, Netherton, Choppington, Cambois, East Sleckburn.

The region known as Bedlingtonshire is locally situated within the county of Northumberland. It came to the see, like Sadberge, *en bloc* and by purchase, and seems as early as 901 to have had a certain organization.<sup>1</sup>

From all this we shall be safe to conclude that from a pretty early time the bishop's vills had for administrative and possibly judicial purposes been arranged in groups which a later age had no difficulty in recognizing as manors. What went on within these groups or how far they entered into the public law relations of the bishopric are questions which it is easier to put than to answer. The difficulty is that we are dealing with a single great estate, the lord of which is also 'in loco regis' in the county in which it lies. It is hard to be sure, then, whether in any doubtful case the bishop is exercising lordship or sovereignty, and one is fain to exclaim with the perplexed thirteenth-century reporter whom this double status confounded, 'Quo teneam vultus mutantem Protea nodo.'<sup>2</sup> Unhappily we cannot tell how the bishop dealt with other people's manors, whether when a tax was raised it was levied on the manors or on the vills composing them, or in what relation the manorial courts stood to the palatine judiciary. General taxation in the bishopric was irregular, extraordinary, and probably of late introduction,<sup>3</sup> and the late and meagre judicial records which we command afford no illustration of the second point. The earliest sheriff's account is of the fourteenth century, and, as we have seen, the Halmote Rolls do not begin until the same period. All we can say then is that for financial purposes the bishop dealt with his own estates on the basis of vills, not of manors. The inference therefore remains that manorial organization existed solely for purposes of local administration, whether agricultural or judicial. In these circumstances it may be assumed to have come into existence as early or as late as the like organization of the rest of the kingdom. The name, of

<sup>1</sup> Emit etiam illem episcopus (sc. Cuthardus) de pecunia sancti Cuthberti villam quæ vocatur Bedlington cum suis appendiciis, Nedertun, Grubba, Twisle, Cebbington, Sliceburne, Commer (*Symeon of Durham* (Rolls Ser.), i. 2-5). On the identification of these names see the same work in Mr. Hodgson Hinde's ed. of *Symeon* (Surtees Soc.), 1868, p. 147.

<sup>2</sup> Rot. Cur. Reg. 7-8 Joh. No. 36, m. 13-, printed in *Abbrev. Plac.* (Rec. Com.), 94, and in full in Lapsley, *Ge. Pal. of Dur.* 313-314. The quotation is of course from Horace.

<sup>3</sup> Lapsley, *op. cit.*, 116-120, 271-275.



course, will not be earlier than the Norman Conquest, but the organization of a great estate with a court for its tenants will long precede that event, and whatever immediate effect William I.'s financial and administrative measures had upon the English manor must have been lacking in Durham, where that institution followed a free development.

We may now return to our task of drawing from the evidence of Boldon Book some coherent account of the social and economic life of the bishopric at the close of the twelfth century, and for this purpose we shall pass in review first the various classes of the rural population and then the land on which and by which they lived. The fulcrum of the mediæval rural economy was the villein community, those who tilled the soil in common for their own benefit and for that of the lord to whom the land belonged. Whatever other elements might compose the village population—and they were many and various—the villeins with their land remained the core and centre of the community, constituting what German scholars have happily called the 'engere Gutsverband.' A free tenant might hold the demesne at farm from the lord, but it was the villeins who worked the land. On the other hand, the village would contain a cloud of minor tenants, farmers, cottars, bordars, crofters, and perhaps a few bondmen, but the open fields, in which these men had little or no portion, were worked by the villeins, who were obliged to make over a share of the produce to the lord.

The system upon which the bishop's land was held and worked was essentially the same as that obtaining throughout the greater part of England at this time, and known to modern writers as the open-field system.<sup>1</sup> In return for the use of the land the villeins owed their lords certain renders in money and kind and certain days of labour on his demesne, together with other services generally specified. The amount and nature of these renders and services, however, were conditioned by the environment of the community, and seem at the first glance to have differed from vill to vill. An attentive reading of Boldon Book, however, makes it clear that in respect to the nature and rate of their obligations the Durham vills may be arranged in a few definite classes, and by following this order we shall best illustrate the question in hand. First, there are four definite types, namely, pastoral, agricultural, and forest vills, and the nascent boroughs. Beside these there is a fifth class in regard to which Boldon Book gives us less information, recording the profit or value of the vill only, without enumerating its services and renders. Sometimes we are told that the vill is held by a tenant of the bishop, or again the tenant is not named and there is merely a note that such a vill renders so and so much, or finally a vill is described as owing so much military service, generally expressed as the fractional part of a knight's fee. Thus we have three subdivisions of the fifth class.

Boldon is typical of what, for reasons which will presently appear, we have called the pastoral vill. The community here consists of twenty-two

<sup>1</sup> Durham was a county of open fields and nucleated villages. An acquaintance with the open-field system of agriculture may be assumed in view of the abundant literature of the subject which has appeared in English in the course of the past thirty years. See particularly E. Nasse, *The Agricultural Community of the Middle Ages*, trans. H. Ouvry, 2 ed. 1872; F. Seebohm, *The English Village Community*, 4 ed. 1890; C. M. Andrews, *The Old English Manor*, 1892; W. Cunningham, *English Industry and Commerce*, vol. i. (4 ed. 1905); W. J. Ashley, *Economic History*, vol. i. 3 ed. 1894; Maitland, *Domesday Bk. and Beyond*, 1897; cf. A. Meitzen, *Siedelung und Agrarwesen*, ii. 97-140.



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villeins (villein households or holdings would more nearly represent the actual state of things) holding thirty acres<sup>1</sup> of land apiece. Every villein owed certain regular and certain special services. Three days a week throughout the year he must work for his lord, but exceptions were made for Easter and Whitsun weeks and the twelve days between Christmas and Epiphany. Then, in the autumn, when the lord's mowing was to be done, the villein and his whole household, except the housewife, must do four days of special work, also he must reap three rods of the oat-field and plough and harrow the stubble, but at this time the burden of week-work was removed. Then there were certain obligations incumbent upon the whole community of the villeins. Every village plough must work and harrow (the plough-team is what is meant, the instrument made little difference) two acres of the demesne, but while this labour was proceeding week-work was again suspended and the men received a dole of food. Every pair of villeins was required to construct a booth for the annual fair held on St. Cuthbert's days in March and September. The whole villein community might be required to construct every year, if need were, a house forty feet long by fifteen wide, but then they would be excused from 'averpenny,' a money payment in commutation for carrying service otherwise required of them. Turning from services to renders we find that every villein owed 2s. 6d. for scot and 16d. for averpenny, and rendered as well half a chaldre of oats and five cartloads of wood for fuel and two hens and ten eggs. Finally the whole vill rendered 17s. cornage and one milch-cow, and this is the distinctive mark of the pastoral vill, for cornage, as it will shortly be contended, is characteristic of a community which is, or at least which has been, primarily pastoral. This class includes forty-five vills distributed throughout the four wards into which the bishopric is divided.<sup>2</sup>

We have called the second type of vills agricultural rather because it wants the distinguishing pastoral mark of cornage than because it is more exclusively agricultural than the first class. Darlington is the representative of this type. The villeins there hold forty-eight bovates, but their number is not recorded; it would either be forty-eight or twenty-four, more probably the latter, as the virgate of two bovates was the normal peasant-holding. Their services are not arranged as at Boldon, under week-work and boon-work. The community as a whole has the duty of mowing the Bishop's meadow and making and carting his hay, and also they must enclose his yard (curia) and copse. They render the customary services at the mills, and three times a year they must cart wine, salt, and herrings. Then

<sup>1</sup> This must be the sense of the words, 'ii bovatas terræ de xxx acris,' although of course they could bear another meaning. Mr. Seebohm, *Village Community*, 68-69, reads the passage so, and we know of course that the virgate of thirty acres was the normal peasant-holding. Cf. Vinogradoff, *Villainage in England*, 238 ff.

<sup>2</sup> I.—*Chester Ward*. Boldon, Newton, Cleadon, Whitburn, Whickham, Crawcrook, Great Usworth.

II.—*Easington Ward*. Wearmouth, Tunstall, Ryhope, Burdon, Easington, Thorpe, Shotton, North Sherburn, Shadforth, Cassop, Herrington, Hutton, Sheraton.

III.—*Stockton Ward*. Sedgfield, Middleham, Cornford, Norton, Stockton, Hertburn, Preston, Butterwick.

IV.—*Darlington Ward*. Heighington, Killerby, Middridge, Thickley, North Auckland, Escomb, Newton, West Auckland, Brafferton, Binchester.

V.—*Bedlingtonshire*. Bellington, West Sleekburn, Netherton, Choppington, Cambois, East Sleekburn.

The vills of Bedlingtonshire seem to have compounded for many or most of the Boldon services. North and West Auckland with Newton and Escomb had certain forest obligations which placed them half way between the Boldon and Stanhope types.

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one load of wood had to be carted for every bovat, and when the bishop travelled an indefinite amount of carriage service might be required of the villeins. There was no render in kind, but every bovat had to pay 5s. All of the villis of this type are situated in the Darlington ward.<sup>1</sup>

The distinctive mark of the third class is service in the forest or in connexion with the bishop's great autumn 'battue' known as the 'magna caza.' Stanhope, the typical forest vill, contained twenty villeins holding a bovat apiece and paying every man 2s. on his land. They were responsible for the usual agricultural services and for carriage as well, but part of the latter duty consisted in conveying game to Durham and Auckland. Then at the time of the 'magna caza' the whole villen community was required to build and furnish the bishop's temporary lodgings, consisting of a kitchen, a larder, and a kennel. The villeins of the neighbouring Aucklandshire completed the encampment by supplying a hall sixty feet by sixteen, a chapel forty feet by fifteen, a buttery, store-room, chamber, and privy; and by enclosing the whole temporary settlement with a hedge or fence. These Stanhope tenants, moreover, were obliged to find whatever litter might be required and to fetch the bishop's supplies from Wolsingham. Tenants of other forest villis furnished ropes and dogs for the 'battue.' Services of this sort, as well as the keep (and we may suppose the training) of dogs and horses, and the care of the deer in their breeding season, were not confined to the villeins, but were required, as we shall presently see, of the tenants in drengage as well.<sup>2</sup>

The boroughs of the bishopric will receive the separate treatment which they demand in another part of this chapter. They are introduced here, however, on account of their agricultural aspect, which was still prominent, one might well say predominant. It is mainly as agricultural communities that they figure in Boldon Book. Most of them, indeed, were of Bishop Pudsey's creation, and, with the exception of Durham, may be regarded as very rudimentary municipalities.

Over against the four well-defined types which we have been examining stand the villis of which we know no more than their value, their services and renders having been for one reason or another left unrecorded. These, again, may be arranged in three subdivisions, although if the details were known any one of the villis so grouped might conform to one of our first three general types. The fourth type is excluded, for the erection of a vill into a borough would not be passed over in silence. In the first place, there are thirty-seven villis held of the bishop by tenants whose names are recorded in Boldon Book. Six of these are held, feudally, either by knight-service or in alms.<sup>3</sup> Sixteen more are held by a service which, as will presently be argued, is a form of drengage.<sup>4</sup> The tenants of the remaining fifteen hold either by some form of fee-farm, consisting of a money rent, or else by the bishop's

<sup>1</sup> Darlington, Blackwell, Cockerton, Great Haughton, Whessoe.

<sup>2</sup> The list of the forest villis follows. It is to be noted that the cornage-paying villis of Aucklandshire are included as having forest-services. They form part, therefore, of two classes:—

I.—*Darlington Ward.* Stanhope, North Auckland, West Auckland, Escomb, Newton.

II.—*Chester Ward.* Lanchester, Iveston, Marley, Britley, Tribley, Holmeside.

<sup>3</sup> Pencher, Edderacres, Trimdon, Muggleswick, Reyermore, Farnacres.

<sup>4</sup> Plawsworth, Little Usworth, Washington, Little Burdon, Twizell, Heworth, Oxenhall, Thickley (Newton), Lutrinton, Henknoll, Cornsay, Hedley, Edmondbyers, Hunstanworth, Herrington, Sheraton.



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favour, and upon sufferance.<sup>1</sup> Three of these villis are noted in Hatfield's Survey as paying cornage, and might therefore have been assimilated to our first class.<sup>2</sup>

In the second place, Boldon Book enumerates fourteen villis which render a money payment only.<sup>3</sup> Since there is no mention either of a tenant or of the services and obligations of the villeins, three possible explanations are open to us. We may believe that the vill was in the hands of an unnamed tenant who would be holding by fee-farm, or that it was being farmed for a term of years either by an individual or by the villata, or body of villeins. I am inclined to think that the first is the true explanation, partly because either of the other arrangements would lack the relative permanence of fee-farm, and partly because they occur and are specifically described in other parts of Boldon Book. But the capriciousness of records of this kind in such matters makes it almost impossible to argue from their silence, or to ascribe much self-consistency to them, and it will be safer therefore to regard these villis simply as held in some sort of farm.

Finally, there are five villis which, although no tenant is named, are recorded as rendering the fractional part of the service of a knight's fee.<sup>4</sup> Here we must suppose either that there was an unnamed tenant or that the vill was in the bishop's hand ready to be granted out in return for the specified services, which would then be in reality a valuation.

It is clear, then, that in essentials the villein community did the same manorial work in all parts of the bishop's estate, although the adjustment and some of the incidents of their renders and services differed with their environment. The most difficult and perhaps the most important of all of these incidents, the exact nature of which now demands our attention, is the render known as cornage.

In the mediæval records, whether national or local, that relate to the four northern counties of England, the term cornage<sup>5</sup> occurs with some frequency from the twelfth to the fourteenth centuries. The question of the origin and nature of the institution to which this term applied has been discussed with various degrees of learning and acumen since the time of Littleton, without, unhappily, producing any explanation that has passed unquestioned. The truth is that the documents at our disposal appear to contradict one another, to lack self-consistency. The term cornage would seem to describe now one thing, now another, according to the date of the document or the region from which it emanates, and yet there is evidence of an original and underlying unity which cannot be disregarded.

Here we must restrict ourselves to the discussion of the Durham evidence, although we may presently indicate some ways in which the general antinomy

<sup>1</sup> Newton-by-Durham, Pelaw, Picktre, Newton-by-Boldon, Hardwick, Grindon, Ketton, Hunwick, Frosterley, Consett, Heley, Migley, Langley, Smalles, Stella.

<sup>2</sup> Whitwell, Herrington, Sheraton.

<sup>3</sup> Chester, School Aycliffe, Old Thickey, Harperley, Medomsley, Edmondsley, Crook, Pokerley, Newsham, Barford, Hulam, Cornhill, Newbiggin, Upsetlington (Ladykirk).

<sup>4</sup> Uthill's Biddick, Tillmouth, Heton, Twysell, Duddoe.

<sup>5</sup> Other terms were also employed:—'geldum' or 'cornagium animalium' in the *Pipe-Roll of 31 Hen. I.* (Rec. Com., 1833); 'galham animalium' in a chart. of Hen. I., *Abbrev. Plac.* (Rec. Com., 1811), 66b, 67a; 'noutegeld' in *Pipe-Roll for the Con. of Cumb., Westmorland, and Dur., during the Reigns of Hen. II., Ric. I., and John* (Soc. of Ant. of Newcastle-upon-Tyne, 1847); 'hornegeelde,' *Bracton's Note Bk.* (1887), No. 1,270; cf. *V.C.H. Cambs.* i. 314, 315.



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might be reconciled.<sup>1</sup> The earliest texts come from the reign of Henry I. They consist of a charter of Bishop Ranulf Flambard,<sup>2</sup> restoring to the prior and convent certain lands of which he had deprived them, and the king's confirmation of that charter. The bishop conveys, *inter alia*, 'Burtun cum solitis consuetudinibus'; the King is more explicit: 'cornagium de Bortona quod Unspac tenet, scilicet, de unoquoque animali 2d.'<sup>3</sup> Here, then, is a point of departure; cornage was a payment made by a vill—not by the lord of the vill—on beasts at the rate of twopence per head. The natural inference that in this case at least the payment was made for the right to pasture cattle would be confirmed by the fact that in 1296 the 'communitas' of Burton was permitting the tenant of every bovate in the vill to turn out two beasts on the pasture.<sup>4</sup> After the death of Flambard, in 1128, the see was vacant for five years, and its revenues therefore figure in the national accounts. In the Pipe Roll of 31 Henry I., accordingly, we may read in the account of Geoffrey Escolland, who was keeper of the temporalities *sede vacante*, 'de cornagio animalium episcopatus, 110*l.* 5*s.* 5*d.*'<sup>5</sup>

It must not be supposed, however, that all the bishop's vills paid him for the pasture of their cattle and that cornage was therefore a universal institution and a source of considerable revenue. This may be shown from testimony of Boldon Book. It will be remembered that the Boldon entry, after enumerating the rents and services of the villeins, adds, 'Tota villa reddit 17*s.* de cornagio et i. vaccam de metride.' The bishop's unfree tenants at Boldon, that is, are making a payment for what we have inferred to be the right to pasture cattle, and, further, are making it partly in money and partly in kind, by the render of a milch cow. The villeins of many other of the bishop's manors were also paying cornage. It should be noted, moreover, that with a few exceptions, which will be dealt with presently, this obligation rested on the unfree only. In Boldon, in 1183, there is no doubt that cornage is merely an incident of unfree tenure, a seignorial due, and, if compared with others, not a very important one.<sup>6</sup>

Now this due, and here is a point of importance, was not incumbent on all the manors of the bishopric. Boldon Book deals with, roughly, about 141 vills; of these, thirty are noted as rendering cornage and a milch cow, and form, therefore, as we have already seen, a distinct type or class. Nine more may be added because, although they pay no cornage, they render either the milch cow or 'castleman' (an incident distinct from cornage, but

<sup>1</sup> For a more general discussion of the subject than can be undertaken here, see Littleton, *Tenures*, §156, with Coke's comment; *New Natura Brevium*, 8vo, London, 1652, p. 200; Hutchinson, *Hist. of Dur.*, i. 147, iii. 113–114; Surtees, *ibid.* i. 252, iii. 152; Hodgson, *Hist. of Northumb.*, i. pt. i. pp. 258–263; Greenwell, in *Boldon Bk.* (Surtees Soc.), gloss. s. v. 'cornage,' and *Hatfield's Surv.*, p. 278; Seebohm, *Engl. Village Community*, 68–72; Crump, in Palgrave, *Dict. of Political Economy*, i. 426–427; Maitland, in *Engl. Hist. Rev.*, v. 627, ff., and *Domesday Bk. and Beyond*, 147; Vinogradoff, *Villainage in England*, 295; Hall, in *Red Bk. of the Exch.*, ii. pref. ccxxvi.–ccl.; Round, *Commune of London*, 278–288; Wilson, in *V.C.H. Cumb.*, i. 295–335; Lapsley, in *Amer. Hist. Rev.*, ix. 670–695.

<sup>2</sup> Flambard became Bishop of Durham in 1099; he was deprived in 1100, restored in 1107, and died in 1128; W. Stubbs, *Reg. Sac. Angl.* (2nd ed. Oxf., 1897), 41; Le Neve, *Fasti Eccl. Angl.*, ed. by T. D. Hardy (Oxf., 1854), iii. 282–283; J. H. Ramsay, *Foundations of Engl.* (Lond., 1898), ii. 256.

<sup>3</sup> Both charters are printed in *Feodarium*, 145 note; cf. *ibid.* 149 note.

<sup>4</sup> *Dur. Halmote R.* (Surtees Soc.), 12.

<sup>5</sup> *Pipe Roll 31 Hen. I.* (Rec. Com. 1833). A translation of the part of the record referring to Durham may be read in Canon Greenwell's edition of *Boldon Bk.* (Surtees Soc.), App. pp. i–iii.

<sup>6</sup> The bishop took from Boldon 5*s.* scot and 28*s.* 6*d.* averpenny, as against 17*s.* cornage plus 6*s.*, the regular tariff of composition for the milch cow.

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characteristic of the type), or, as in the case of Norton, are relieved from cornage 'pro defectu pasturæ.' Further, fourteen vills, having compounded for all or nearly all their service for a money payment, might be regarded as doubtful. Still, as one of these is noted in Boldon Book itself as paying a composition for cornage, and two others in Bishop Hatfield's Survey, a fourteenth-century record similar to Boldon Book, it may be inferred that the rest are of another class. Finally, thirty-nine vills in Boldon Book are held of the bishop in chief, and here the services are not enumerated; but on turning to Hatfield's Survey we find that only three of them are paying a cornage composition. This rough calculation shows that of the 141 vills enumerated in Boldon Book only forty-five, or less than one-third, are of the cornage type.

At the close of the twelfth century, then, cornage in Durham was an incident of unfree tenure in certain specially situated vills. It was being paid partly in kind and partly in a money payment specifically described as the composition for the render of a cow (*vacca de metride*), indicating that the institution was already ancient and had been made the subject of at least a partial composition.<sup>1</sup> From the nature of the evidence connecting cornage at every turn with cattle and pasture we are led to the inference that it was a payment made for the agistment of cattle, and from the survival of the render of a milch cow that it had originally consisted of an annual render of cattle, perhaps a proportion of the increase of the herd.

On the other hand, Littleton says, 'It is said that in the marches of Scotland some hold of the king by cornage, that is to say to wind a horn to give men of the country warning when they hear that the Scots or other enemies are come or will enter England.'<sup>2</sup> It has been the fashion to deride this as fantastic, as indeed it is, but there is no question that cornage is described as a tenure in documents relating to all the northern counties except Durham; and some form of serjeanty, probably connected with forest service, the note of which, so to say, was horn-blowing, occurs in various parts of England throughout the Middle Ages.<sup>3</sup> An Oxfordshire manor was held by the service of blowing a horn to keep a certain forest, and a similar tenure which Camden noted at Bradford, in Yorkshire, was still in existence when Gough was editing the *Britannia* at the end of the eighteenth-century.<sup>4</sup>

The difficulty is serious, and one is quite prepared to admit that those who contend that cornage in England was a seignorial due and was never anything else ought to show some way of accounting for the perplexing talk about cornage tenants in the other northern counties. It is impossible,

<sup>1</sup> The word 'gild,' used in connexion with cornage in the forms 'geldum animalium,' 'noutegeld,' and 'horngeld,' is in itself an indication that a composition had occurred; in this sense it is used interchangeably with 'mal,' as in 'malmannus.' See Vinogradoff, *op. cit.* 293. An illustration of this may be seen in a kind of glossary of hard or barbarous words occurring in legal documents which seem to have been current in mediæval England. It was subjoined to the customary of the soke of Rothley in Lincolnshire (1312), and at Durham it was written into the 'Registrum Primum' of the Dean and Chapter, under the rubric, 'Explicatio vocum veterum.' The passage is as follows, 'Gildi hoc est quietum de consuetudinibus servilibus que quondam dare consueverint sicuti *Hornchild*. . . . *Hornchild* [*hornbiel*, and *hornegeld* in the Durham copy], hoc est quietum de consuetudine exacta per talliam per totam Angliam terram scilicet de quacunque cornuta bestia [*de omni bestia cornuta*, in the Durham copy].' See Vinogradoff, *loc. cit.*; *Arch.*, vol. xlvii., pt. i., 99 ff.; *Boldon Bk.* (Surtees Soc.), App. p. lv.

<sup>2</sup> Coke, *Second Institute* (many editions), Par. 156.

<sup>3</sup> T. B. Trowsdale, in *The Reliquary*, xx. 157-160 (I owe this ref. to Prof. Gay, of Harvard).

<sup>4</sup> These cases, the first of which is from Harl. MSS., No. 34, are cited by Mr. Trowsdale.



however, to undertake this without disregarding the limitations of the present work, which confine one to problems arising within a single county.

We return now to our Durham evidence only to find that we may not yet congratulate ourselves that we have reached the whole truth about cornage. Some disconcerting texts remain to be examined. In the first place, Boldon Book affords several instances of freemen paying cornage, a fact which apparently traverses our theory that cornage was distinctively an incident of unfree or villein-tenure. But if we suppose that, like many other such incidents, this charge had by the twelfth century got itself fastened to the soil, and in such a way, indeed, that every bovaté in any vill was answerable for a fixed portion of the cornage of that vill, then the difficulty disappears. If a free tenant held several bovates in a cornage-paying vill he would naturally not be grouped for the purpose of cornage with the villeins, nor, on the other hand, would the bishop be deprived of his due by reason of his tenant's status. Again, the same reasoning would hold in case the whole or the fraction of a cornage-paying vill was granted to a freeman. With this hypothesis in mind, we may examine the passages referred to. At Heighington there are sixteen villeins, each of whom holds two bovates; these render among other things '36s. de cornagio' and one milch cow. Now follow two striking passages: 'Hugo Brunne tenet, quamdiu uxor ejus vixerit, ii. bovatas pro iis., quos reddit ad cornagium . . . Simon hostiarius ibidem tenet terram quæ fuit Utredi, cum incrementis quæ Dominus Episcopus ei fecit usque ad lx. acras, et reddit pro omnibus i. besancium<sup>1</sup> ad Penthecostem.' Now the first of these gives us the cornage rate at Heighington. It was 1s. on the bovaté, and the words 'reddit ad cornagium' certainly suggest a contribution to some larger sum. Further, the phrasing of the text suggests a beneficial rating. Simon held as much as 60 acres, but he paid only 2s. for Utred's holding and the addition which the bishop had made. Utred no doubt made the same render for the smaller tenement which contained, of course, less than Simon's 60 acres. Let us suppose that it contained (or was rated at) just half, that would be 30 acres, or to put it otherwise, 2 bovates. We are somewhat justified in this assumption because it tallies with the render of 2s. which were paid as a contribution, we can scarcely doubt, to the cornage of the vill. For observe that at the rate of 1s. on the bovaté the sixteen villeins would pay only 32s., 4s. short of the recorded cornage of the vill. Now if you add the 4s. from the two free tenants you have exactly the sum, 36s. A similar case occurs at Escomb, where our formula may again be tested. There are fourteen villeins, 'quorum unusquisque habet i. bovatom, et reddit et operatur omnibus modis sicut villani de North Aclet.' At North Auckland each villein rendered 19d. cornage. Now at Escomb 'Elzibrid tenet dimidiam bovatom, et reddit . . . 9d. de cornagio'; that is, at the rate of 19d. per bovaté he is one penny short. The case of Herrington is very instructive. The entry reads as follows: 'Duæ partes de Heringtona, quas Hugo de Hermas tenet, reddit (*sic*) 20s. de cornagio et ii. partes i. vaccæ de metride,'

<sup>1</sup> i.e. 2s. See the entries under Grindon, Heighington, Stanhope, and Farnacres. At Stanhope the best texts give the value of the besant as 4s., but this is a slip. At Farnacres we get 'besancium vel iis.' The *Liber Vitæ* affords a similar proof, 'Aernisius de Aluertone . . . unum bisantium . . . vel ii. solidos,' p. 107, cf. 82, 83. In 1227 the dean and canons of Chichester were paying an annual due of 1 besant or 2s., *Cal. of Chart. R.* i. 34. I am indebted to Prof. Gross for this reference; cf. *Boldon Bk.*, App. p. liii.; Trice Martin, *Record Interpreter*, 180.



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etc. Observe that it is not the tenant Hugh who is described as paying the cornage and the proportion of the milch cow, but the two parts of the vill which he holds. This corroborates our inference that cornage had become a burden on realty. Sheraton, again, is a case similar to Herrington. John holds one-half of the vill 'pro iii. marcis, et est quietus de operationibus et servitiis,' in return for Crawcrook, which he had quit-claimed to the bishop. 'Thomas tenet aliam medietatem de Shurutona et reddit 30s. de cornagio, et dimidiam vaccam de metride,' etc. Finally, there is a curious case at Whitwell. 'Whitwell, quam Willelmus tenet in escambium pro terra quam Merimius tenebat in Querindune, reddit dimidiam marcam.' Now the group of villis known as Quarringtonshire had pasture and paid cornage, and it is probable, therefore, that when the exchange was made this incident would be reckoned in the composition at which William was holding the new land. On turning to Hatfield's Survey we find this expectation confirmed. The manor of Whitwell there figures as a member of Quarrington. The Master of Sherburn Hospital holds the manor and the pasture and renders *inter alia* 2s. for cornage.<sup>1</sup>

We may conclude, then, that as early as the time of Bishop Pudsey's survey cornage had begun to lose its original character as an incident of unfree tenure, and to assume that of a burden on realty, so that where a freeman received from the bishop a holding in a cornage-paying manor, or the whole of the manor, he would be responsible to his lord for a proportion or the whole of the cornage of the manor. Fortunately, we have a case illustrating this change. In the middle of the twelfth century Laurence, prior of Durham, conveyed to a certain Roger the land known as Pache, a member of Monkton, one of the most ancient parts of the 'patrimonium S. Cuthberti.' One of the conditions of tenure was, 'quod pro tota hac terra . . . pro cornagio dabit 2s. in anno, scilicet, ad festum Sancti Cuthberti, et pro metreth quantum ad eandem terram pertinet, ad festum Sancti Martini.'<sup>2</sup> This land was returned to the convent in 1347 by a certain Walter Smyth.<sup>3</sup> In 1373 Thomas Willi was holding of the prior in Monkton eighty acres of land 'quondam Walteri Smyth de Monkton quæ solebant reddere scaccario 2s. et pro cornagio 20d.'<sup>4</sup>

Here, then, the cornage payment has fastened to the soil, has become a burden on the land, a part of the 'forinsecum servicium,' the obligation, that is, which the land owed to the king (in this case to the bishop), regardless of what other tenurial relations might have been established in connexion with it. In that phrase lies the key to the later history of cornage in the bishopric. The changes which occurred after the Norman Conquest acted on cornage as on other institutions, fastening it to the soil. In such villis as remained in the bishop's hand cornage continues to be paid by the villeins.<sup>5</sup> In the villis that were granted out by him it became a part of the forinsec service which his tenants rendered him and which, no doubt, they collected for themselves from their unfree tenants. This point also may be illustrated by texts. In 1183 the vill of Great Usworth was in the bishop's hand; the villeins rendered

<sup>1</sup> *Hatfield's Surv.* (Surtees Soc.), 150.

<sup>2</sup> *Feod.* 114 n.

<sup>3</sup> *Ibid.* The editor, Canon Greenwell, cites but does not print the charter.

<sup>4</sup> *Dur. Halmote R.* (Surtees Soc.), i. 119.

<sup>5</sup> e.g. *Hatfield's Surv.* (Surtees Soc.), 100, 129, 142, 183.

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30s. 'de cornagio' and one milch cow. In 1384 'Willelmus de Hilton miles tenet ii partes villæ de Magna Useworth, et Alicia de Moderby terciam partem dictæ villæ per servitium forinsecum, et reddunt per annum ad iiii terminos usuales 10s. Idem Willelmus et Alicia . . . reddunt pro cornagio dictæ villæ per annum, ad festum Sancti Cuthberti in Septembri, 30s. Idem reddunt pro i vacca de metrith, ad festum Sancti Martini, 6s.,'<sup>1</sup> etc. The omitted portions contain a list of money payments for the renders and services of the villeins as recorded in Boldon Book. Like cases will be found at Iveston, Sheraton, and Herrington.<sup>2</sup>

Let us bring together now the results of our examination of the Durham evidence. In the first place, whatever the origin of cornage may have been, it was, when we meet with it in the documents of the twelfth century, an incident of unfree tenure. Further, it was not universal in the bishopric, but occurred only in such villas as had pasture, and here it represented at once the villeins' recognition of their lord's proprietorship of the pasture and a payment for the use of it by their cattle. This payment, it would seem, had originally been made in kind out of the annual increase of the herd, but in the twelfth century was already compounded for a money payment and the render of a milch cow. Then we have marked in the twelfth-century documents the tendency of this payment to fasten itself to the soil and become a burden on the land without regard to the status of the holder. Finally, from later documents we have been able to assert the predominance of this tendency which caused cornage—or rather the money composition for cornage and the milch cow together—to merge in the forinsec service of such lands as were charged with this burden.

Certain other results, no less important because they are negative, may also be stated as the outcome of our inquiry. We have seen no warrant for describing cornage as a tenure such as might be co-ordinated with socage or serjeanty or the like. It was rather one of many incidents of villein-tenure peculiar to such villas as enjoyed certain advantages from their lord. Again, we have met with no reason for connecting cornage with any special form of military service incumbent on the entire bishopric. That is on the face of it impossible, because cornage was not universal. This last objection, again, will hold against any attempt to describe cornage as a general impost or tax.

The terms 'yolwayting' and 'michelmeth' occur four times in Boldon Book, always in the sense of some villein services which have been commuted for a money payment. These obligations rested on the villeins, and on the villeins only,<sup>3</sup> of Heighington, Killerby, Middridge, and Thickley. It is noticeable that these villas are all of the cornage-paying type, all situated in the Darlington ward, and all members of the same manor, that of Auckland.<sup>4</sup> Yolwayting had been compounded for at the rate of 1s. *per capita*, michelmeth at 4d.<sup>5</sup> These payments all recur in Hatfield's Survey,<sup>6</sup> and were therefore surviving in the fourteenth century, but they are not mentioned in any other

<sup>1</sup> *Hatfield's Surv.* (Surtees Soc.), 102

<sup>2</sup> *Ibid.* 119, 152, 157. This point is very strikingly illustrated by the Northumberland texts, which are brought together and discussed in *Amer. Hist. Rev.* ix. 678–680.

<sup>3</sup> The entry in Canon Greenwell's text of *Boldon Book* which describes the cottiers of Heighington as associated with the villeins in the payment of yolwayting is an interpolation, *vid. inf. App. No. ii.*

<sup>4</sup> *Vid. sup. pp.* 267, 270.

<sup>5</sup> A fraction over at Heighington and Killerby.

<sup>6</sup> *Hatfield's Surv.* (Surtees Soc.), 18, 22, 24, 28.



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Durham documents that I have been able to examine. Canon Greenwell conjectured that the term 'yolwayting' should be connected with Yule and the modern waits in the sense of watchmen, understanding the service as connected with 'the protection of that manor-house in which the bishop happened to be residing during the festivities of Christmas.' In support of this he cites a notice from a fifteenth-century rental, 'de quadam placea vocata Yolwayte-stand.'<sup>1</sup> This is to a great extent a question for professional philologists who, we may suspect, would find Dr. Greenwell's explanation tainted with popular etymology. Another and equally serious objection lies in the fact that the service of yolwayting was incident to tenure in Auckland Manor only, so that the bishop, had he been disposed to keep his Christmas elsewhere, would have been obliged to forego the special protection which Canon Greenwell accords him throughout his estates. Mr. Hubert Hall, whose theory of cornage as a mode of tenure requires an organic connexion between that institution and castle-guard, understands yolwayting as a form of the latter service.<sup>2</sup> His evidence comes from Suffolk and Northumberland, and really proves no more than that the term 'wayte' has the sense of protection or guard.<sup>3</sup> He might have added the case of the manor of Narbrough 'held by castle-guard which could be redeemed by wayt-fee.'<sup>4</sup> Without admitting the validity of Mr. Hall's arguments in regard to cornage, the truth of the matter under consideration may be detected in his explanation and in that of Canon Greenwell also. The difficulty is that castle-guard appears to have been a free-service, or rather a service incumbent upon free-men.<sup>5</sup> If, however, we regard yolwayting as a variation of the duty of furnishing 'castlemen' common to many of the Durham villis, and see in this again a survival of some parts of the ancient 'trinoda necessitas,' the difficulty vanishes.<sup>6</sup> This conjecture, however, is put forward with much diffidence, for it may turn out that in removing one obstacle we have substituted another and more troublesome one.

With regard to 'michelmeth' we can command even less material than was at our disposal in dealing with 'yolwayting,' as we have only the four occurrences of the term in Boldon Book. We fall back, therefore, provisionally at least, upon Canon Greenwell's quite admissible conjecture, that the service involved some special reaping at Michaelmas, 'beyond the weekly works of tenants, arising from the exigencies of the reaping time.'<sup>7</sup> It will be remarked, however, that regular week-work formed no part of the services of the villis which were charged with 'michelmeth,' although at Boldon, to the general type of which they conform, the villeins owed three days' week-work throughout the year. It may be conjectured then that 'michelmeth' repre-

<sup>1</sup> *Boldon Bk.* App. p. lxxii ; *Hatfield's Surv.* (Surtees Soc.), 285.

<sup>2</sup> *Red Bk. of the Exch.* (Rolls Ser.), II. cccxxvi, ff.

<sup>3</sup> Jocelin de Brakelonde, Cronica in *Memorials of S. Edmunds* (Rolls Ser.), i. 271 ; *Northumb. Assize R.* (Surtees Soc.), 325.

<sup>4</sup> R. M. Garnier, *Engl. Landed Interest*, i. 147, citing Blount's *Jocular Tenures*.

<sup>5</sup> Mr. Round has made this subject his own. See his papers in *The Commune of London*, 278-288 ; *The Arch. Jour.*, N. S., ix. 144-159 ; *The Ancestor*, July, 1903.

<sup>6</sup> Castle-guard as a free service existed in Durham as well as the villein duty of rendering castlemen. See a charter dating from the early years of the thirteenth century by which Reginald Basset granted his house in Durham to the monks, reserving lodging for himself and stabling for four horses, 'cum . . . contigerit me vel heredes meis equum facere ad custodiam castelli Dunelmensis.' *Fcod.* 196 n.

<sup>7</sup> *Boldon Book*, App. p. lxxv. ; *Hatfield's Surv.* 281.



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sented some special form of week-work at a fixed season to which these villeins, for the rest relieved from that burden, were subjected.

The question of the status, the social and legal position, of the twelfth-century villein has been examined elsewhere under circumstances which admitted the indispensable condition of the comparative method. Here, where we are confined to a single county and have attempted only to indicate the special conditions attaching to villeinage in Durham, it will be enough to refer the reader to a few general treatises.<sup>1</sup> One point, however, ought to be emphasized: the villeins were essentially a community whose life at every turn was conditioned by its relation to the land, placed as it was 'in a constant working submission to the manor, in constant co-operation with other plots similarly arranged to help and to serve in the manor.'<sup>2</sup> Regardless of birth or status, those who had villein land formed part—as tenants of that land—of an intricate agricultural machinery developed under a system of natural economy to provide the lord of the land with the labour necessary to till his demesne and with a fair return as well upon the land in service. It is to this whole complex that the convenient German phrase already quoted so happily applies—the 'engere Gutsverband,' the narrow land-community.

There remain two classes of the village population consisting of persons who like the villeins were treated as a group or community having equal holdings and subject to uniform obligations, but who show certain interesting points of divergence from the villeins. These are the 'firmarii' and the cottiers.

The term 'firmarius' was generally applied to a person who farmed the demesne or the whole manor, rendering to the lord a stipulated amount of agricultural produce;<sup>3</sup> but the practice of farming or letting a manor or vill to the villeins themselves was not unknown.<sup>4</sup> In Boldon Book the term 'firmarius' seems more often to embody the second than the first of these notions. At Wardon, for example, there are nine 'firmarii' who hold eighteen bovates, every bovaté containing  $13\frac{1}{2}$  acres. For every bovaté they render 8*d.* and work twenty days in the autumn with one man, and for every two bovates they harrow four days with one horse. Then they do four boon-days with all their household, except the housewife, within the aforesaid twenty days' work, and they cart corn two days and hay one day. Finally they render one hen and five eggs for every bovaté.<sup>5</sup> Morton, South Sherburn, Carlton, and Redworth conform to this type. But it should be noticed that what we have before us is not quite the same thing as the case of a vill farmed to the villeins. An instance of that is recorded in Boldon Book and may be introduced here for purposes of comparison. The villeins of South Biddick hold their vill at farm and render 5*l.* and a few trifling services in addition. Now at Wardon there are no villeins, the agricultural community

<sup>1</sup> Vinogradoff, *Villainage in England*; Ashley, *Economic Hist.*, vol. i. ch. i.; Seebohm, *Village Community*, chs. ii. iii.; Maitland, *Dom. Bk. and Beyond*, 1-172; *Hist. of Engl. Law*, i. bk. ii. ch. ii. par. 3; Garnier, *Landed Interest*, i. chs. x.-xv.

<sup>2</sup> Vinogradoff, *op. cit.* 171.

<sup>3</sup> Vinogradoff, *op. cit.* 301-305; Maitland, *Dom. Bk. and Beyond*, 62, 146-147; Ashley, *Economic Hist.*, i. 44-45.

<sup>4</sup> *Dom. Bk.* i. 127b, cited by Maitland, *op. cit.*

<sup>5</sup> This and similar cases in Boldon Book cast doubt on Professor Vinogradoff's dictum, 'Chickens . . . were given as an acknowledgment of bondage, eggs represented the number of acres a tenant held in the fields,' *The Growth of the Manor*, p. 329.

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consists of 'firmarii' only. Their duties are less onerous than those of the typical villeins on the bishop's estate, as may easily be seen by comparing the Wardon entry with that, for example, of Boldon. Again, among the 'firmarii' there seems to be no co-operative work. The services and the renders are reckoned on the individual tenement, a pair of bovates, and even the ploughing is determined in the same way. Note also that this work is done by a pair of horses, not by the usual team of oxen. There would be no question then of the heavy village plough drawn by the full team of eight oxen—in short, no co-aration.

Vills of this sort, moreover, seem to escape certain communal obligations. Thus the bishop's manor of Houghton was composed, with two exceptions, of villi rendering cornage and a milch cow. These exceptions were Wardon and Morton, where there were no villeins, but only 'firmarii,' and this will be found true of the other villi of this type described in Boldon Book.

Thus far we have been dealing with the case of a vill composed of 'firmarii' only, but these tenants occur also in connexion with the regular community of villeins. Sedgefield, for example, is a vill of the Boldon type containing twenty villeins who hold two bovates apiece and work and render as they of Boldon: 'moreover there are in the same vill twenty "firmarii," every one of whom holds three bovates and renders 5s.' Then follows a list of their services, which do not differ essentially from those of the Wardon 'firmarii.' This case recurs at Norton, Stockton, Darlington, Blackwell and Cockerton.

The status of the 'firmarii' may also be illustrated from Boldon Book. The Carlton entry is instructive on the point. There are twenty-three 'firmarii' whose tenements, renders, and services are enumerated, but one of these, Gerobod, is singled out by name as being in the bishop's employ. He holds four bovates and renders 20s. and is relieved from works as long as he is in the bishop's service, but when he leaves that service 'operabitur sicut prædicti firmarii in misericordia Domini Episcopi.' Nothing is said in the Carlton or other entries in regard to the 'firmarii' about their status, and this would appear to be a bit of gratuitous information recording something that was or should have been a matter of common knowledge. The 'firmarii,' then, were 'in the bishop's mercy,' they were unfree, and this conclusion is confirmed by comparing the testimony of Boldon Book with that of Hatfield's Survey. Four of the five villi which the earlier survey describes as held by 'firmarii' reappear in the later document,<sup>1</sup> which, in describing three<sup>2</sup> of these four, uses instead of the term 'firmarii' the phrase 'terræ bondorum.' But a comparison of the holdings and services in question shows that the two terms are intended to be equated. If we turn, however, to those villi where Boldon Book shows us a villein community beside or above the 'firmarii,' we shall find that Hatfield's Survey equates 'firmarius' not with 'bondus,' but with 'malmannus.' Then at Sedgefield we have 'malmen,' at Norton 'malmanni sive firmarii,' and at Stockton simply 'firmarii,' and all of these represent the 'firmarii' of Boldon Book. Now the malmen (molmen) of the English records have been made the subject of a good deal of special study and some controversy. We learn that the term was 'commonly used in the feudal period for villeins who had been released from most of their services

<sup>1</sup> South Sherburn is omitted from Hatfield's Survey.

<sup>2</sup> Wardon, Morton, and Carlton.



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by the lord on condition of paying certain rents.<sup>1</sup> It has even been suggested that the malmen should be assimilated to the class of humbler free-holders competent to act as doomsmen in the county court.<sup>2</sup> The term occurs in the bishopric as early as 1130, when the malmen are grouped for purposes of taxation with the thegns and drengs,<sup>3</sup> an association which would raise a presumption of their personal freedom, particularly as we find that in 1197, when the king tallaged the manors of the bishopric, the share paid by the drengs and 'firmarii' is entered separately.<sup>4</sup> Malmen appear once in the Boldon Book, at Newton by Boldon, where they are the sole tenants of the vill on terms that scarcely differ from those obtaining at Wardon, a vill where there were only 'firmarii.' And yet these men worked 'in misericordia Episcopi' and could be described as bondmen: how are we to reconcile the contradiction? Two passages in Hatfield's Survey offer us a possible way out of the difficulty. At Norton, under the rubric 'Tenentes vocati Malmen sive Firmarii,' it is recorded that the tenants, who are rendering unmistakably the same rents and services as the Boldon Book 'firmarii,' hold one messuage and four bovates of land, 'quondam terræ dominicæ.' Then, 'de viii. bov. terræ de eadem tenura, ut patet in libro de Boldon, qui ostendit quod quondam fuerunt xx. firmarii qui tenuerunt inter se xl. bov. terræ, sunt in manu liberorum tenentium pred., videlicet,'<sup>5</sup> etc. Again, at Darlington the 'firmarii' of Boldon Book have disappeared, but under the rubric 'Terræ Dominicæ,' we have a list of rent-paying tenants,<sup>6</sup> of one of whom it is said that he holds his land 'sine operibus,' and it will be remembered that the Darlington 'firmarii' of Boldon Book held their land free of services, and we may regard them as represented, then, by these rent-paying tenants on the demesne in the later survey. Then a further passage under the same rubric lets us see that the demesne land held in this way could be contrasted with the land of the free tenant, 'Simon Acrys ten. i. bov. terræ præter ii. bov. infra liberos tenentes, red. p. a. 20s.' Now, finally, it should be remarked that in connexion with those vills where were 'firmarii' only, Boldon Book records no demesne.

It is clear, then, that the 'firmarii,' like the villeins, were unfree, or at least had begun by being unfree. But unlike the villeins, and by some special arrangement, they were settled on the lord's demesne. From this fact, indeed, and by analogy with the individual 'firmarius,' they may well have got their name, being regarded as the demesne farmers instead of the demesne farmer. Then the special terms, just now mentioned, consisted of pretty extensive money compositions for villein service. Now, as we know that the twelfth century was a period in which much new land was taken under cultivation to meet the needs of an increasing population, we might fairly regard the phenomenon before us as a phase or part of that general movement. Then in the case of vills composed of farmers only we should see relatively new communities allowed or encouraged by the bishop to grow up on his

<sup>1</sup> Vinogradoff, *op. cit.* 183 ff. and the literature there cited. The passage quoted in the text is on p. 184. With regard to the continental 'malmanni,' see Waitz, *Deutsche Verfassungsgeschichte*, ed. 1874, v. 286.

<sup>2</sup> Pollock and Maitland, *Hist. of Engl. Law*, i. ed. i. 533.

<sup>3</sup> Pipe R. 31 Hen. I. in *Boldon Book* (Surtees Soc.), App. p. ii.

<sup>4</sup> Pipe R. 8 Ric. I. (Surtees Soc.) in *Boldon Book*, App. p. vii.

<sup>5</sup> *Hatfield's Surv.* (Surtees Soc.), 175, 177.

<sup>6</sup> *Ibid.* 3, 4.



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demesne land, just as where farmers occur in connexion with villeins we discern something that resembled rather an offshoot from an older vill than the creation of a new one. Special facilities for the composition of services would have been offered to promote this growth, and when this process of composition had begun it commonly advanced. In this way the farmers or tenants on the demesne would have been set apart from the other tenants and could easily come to be identified with the malmen, who, from what origin we know not, had already made much progress toward the ultimate goal of freedom by way of the substitution of rent for personal service. Such is the inference suggested by our evidence, but this, it will be observed, either leaves out of account the question of the original personal status of men settled on the lord's demesne or else assumes implicitly that they were unfree. It should be pointed out, therefore, that another conjecture is possible; this can only be mentioned in passing, since a discussion of it would lead us far afield and bring us into a controversy for which this is scarcely a suitable place. Briefly, then, it is possible to suppose that 'firmarii' and malmen alike represent earlier freemen who, by a process of personal commendation, or by the acceptance of loans of land, had at an early period been drawn into the complex of the great estate (*Gutsverhältniss*) and fallen thereby into economic dependence upon its lord. The similarity of their position to that of the ordinary villein in the twelfth century would account for their being described as unfree. On the other hand, their careful segregation from the villeins in the documents, and their association with the drengs for purposes of taxation would indicate some recollection of their original status. This, then, is another and a possible way of interpreting the evidence before us. To me, I confess, it seems also a probable one.

The case of the unfree tenants known as cottiers is simpler than that of the 'firmarii.' The cottier formed no part of the villein community. His holding was small and did not lie in the open-fields, or if he had a few acres there it was by exception.<sup>1</sup> Still, the line which divided him from the villeins is an economic rather than a legal one.<sup>2</sup> Cottiers occur in twenty-seven of the bishop's vills. Generally they held a few acres besides their tofts and crofts, but often these are not mentioned. Thus at Boldon twelve cottiers held as many acres, and every man worked two days in the week and rendered twelve hens and sixty eggs. But if these may be taken as marking the normal cottier type, we find variations both above and below it. At Houghton 'half-cottiers' (*dimidii cotmanni*) occur; at Heighington, on the other hand, there are two cottiers holding 15 acres (or 1 bovate) apiece, and a like case occurs at Middridge. These instances are particularly interesting, because in the later recensions of Boldon Book these tenements are involved in some of the villein obligations, and we may infer that in time they were quietly absorbed into the villein community. Then at Norton and at Hertburn the cottiers' land lies in the open-fields. The twelve Norton cottiers have one acre apiece beside their tofts and crofts, and the two of Hertburn have twelve acres apiece. At both places the cottiers pay a money rent and help in the hay-making. There is an example, too, of a vill peopled only

<sup>1</sup> Vinogradoff, *op. cit.* 148-149; cf. Seebohm, *op. cit.* 24, 29, 34, 69.

<sup>2</sup> Mantland, *Dom. Bk. and Beyond*, 39.

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by cottiers;<sup>1</sup> at Little Coundon twelve cottiers hold 6 acres apiece, they work two days a week in summer and one in winter, they do four boon-works and render one hen and one hundred eggs. Finally, in five places there are cottiers who neither work nor render in kind, but pay a money rent only.<sup>2</sup>

The term 'bordarius,' which occurs frequently in Domesday Book, is of French origin and seems to have failed to take root in England. The person it describes does not differ from the cottier.<sup>3</sup> In Normandy, where the term was in current use, it seems to have been derived from the fact that the bordar's holding was on the edge or border of the open-fields and that the tenant represented a freedman originally settled there at the time of his manumission.<sup>4</sup> The term occurs twice in Boldon Book, but the scribes seem to have hesitated between 'bordarius' and 'bondarius' or 'bondus,' a clerical uncertainty that was not confined to the bishopric, but occurs in other parts of England.<sup>5</sup> The oldest text of the record certainly gives the form 'bondarii,' a word which was well-established as a general appellation of the unfree by the time of Hatfield's Survey. Still, the later reading 'bordarii' is to be preferred, because the tenants described are certainly not bondmen in the twelfth-century sense of that word, but rather bordars or cottiers. Thus at Sedgefield there are five of them who hold a toft apiece and render 5s. and do four boon-works, and at Middleham and Cornford there are four more who hold a toft apiece on the same terms.

It may be conjectured that if the cottiers and bordars escaped many of the villein obligations they equally lacked some of the villein privileges, notably in the matter of the use of commons. There is evidence that the cottiers paid no cornage, and we have seen reason to believe that cornage was a return made for the use of pasture. Thus the vills of Newbottle and Little Coundon, which contained cottiers only, were not charged with cornage, although they were members of the cornage-paying manors of Houghton and Auckland.

Now the population of a vill included a good many persons who for various reasons formed no organic part of the great agricultural machine of which we have spoken. Some were higher in the social and economic scale than the villeins, others were lower, and we may range all the way from the free farmer of the demesne to the actual bondman without missing this common characteristic of a greater or less degree of individualism. The villeins, the farmers, and the cottiers existed as members of a community, as parts of a machine, and it was their compact body, indissolubly connected with the land they cultivated and occupied that owed such and such renders and services. But the dreng, the rent-paying tenant, the 'hospes,' and the freedman existed as individuals owing services and payments either personally or by reason of their particular holdings to which these obligations were

<sup>1</sup> This is taken as evidence that cottier-tenure was regarded as a mode of villeinage. It occurs in Dom. Bk.: cf. Maitland, *Dom. Bk. and Beyond*, p. 39.

<sup>2</sup> Stockton, Lanchester, Bedlington, East Sleekburn, Newbottle.

<sup>3</sup> Maitland, *Dom. Bk. and Beyond*, 36 ff.; Vinogradoff, *op. cit.*, 145-146; *Growth of the Manor*, 337-338, 352-353.

<sup>4</sup> Kovalevski, *Die ökonomische Entwicklung Europas*, ii. pp. 401-406.

<sup>5</sup> Vinogradoff, *Villainage*, 145-146. The term 'bondus' as the equivalent or even substitute for villein seems to have come into general use in Durham at some period between the composition of Boldon Book and that of Hatfield's Survey. It is very common in the later document: cf. *Dur. Acc. R.* (Surtees Soc.), iii. 896.



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adjusted and attached. Accordingly we pass from the villeins to consider this penumbra of manorial population, which we shall attempt to decompose into its elements, dealing with them in order.

Putting aside those tenants whom Boldon Book itself classifies for us, such as the farmers, the cottiers, and the bordars, we are confronted with a long list<sup>1</sup> of persons whose names, holdings, and services are recorded separately, showing that they stood outside the narrow land community, but who seem at first to have no other characteristic in common. Still, an attentive examination of this list will enable us to arrive at some sort of a classification. In the first place a number of these tenants may safely be allotted to one or other of the categories furnished us by Boldon Book itself. Thus, when we read that at Newbottle, John, son of Henry, held one toft and 12 acres and rendered 12*d.*, we shall not be far wrong if we describe him as a prosperous cottier, for, as we have just seen, the usual holding of members of this class was a toft and croft and a few acres beside. In like manner we may dispose of the tenure of Robert Blunt at Blackwell, who had a 'parva terra' and rendered 6*d.*, or of that widow at Whessoe who had one toft and croft who rendered 6*d.* and did six days' week-work and four boon days.

The remaining tenants of this sort may be arranged for purposes of discussion in seven classes. In the first place there are the drengs. The discussion of this subject will carry us somewhat far afield, and outside the limits of the vill within which for the moment we have fixed our attention, for it is more common to find a man holding a vill of the bishop in drengage than to find one who is holding in drengage of the bishop in a vill. Still, the second case occurs a number of times and the whole subject may be examined at this place.

The institution of drengage has already been the subject of pretty full treatment at Professor Maitland's hands,<sup>2</sup> and those who essay to follow him will generally find that he has reaped the corners of the field and gathered the gleanings of the harvest. Still, the matter cannot be neglected here, and we may even hope to produce a little evidence that did not perhaps serve Professor Maitland's purpose.<sup>3</sup> This tenure, the peculiarity of which in the feudal age was to show attributes at once of the knight-service, serjeanty, and villeinage, is indeed 'older than the lawyer's classification, older than the Norman Conquest.'<sup>4</sup> Professor Maitland has dwelt at length on the similarity between the riding men of Bishop Oswald of Worcester in the tenth century, the radchenistres of Domesday Book, and the drengs of the eleventh and twelfth centuries,<sup>5</sup> and has brought together a good deal of evidence illustrating the social and legal position of the post-Conquest drengs.<sup>6</sup> Before the Conquest the term dreng seems to have been used to describe a fighting-man, one whose business in life was warfare;<sup>7</sup> but what relation it

<sup>1</sup> Vid. inf. App. No. 1.

<sup>2</sup> *Engl. Hist. Rev.*, v. 625 ff.; *Hist. of Engl. Law*, i. 258, 356 note; *Dom. Bk. and Beyond*, 308-309.

<sup>3</sup> The whole subject has been treated from a point of view somewhat different from that adopted here, in an article by the present writer in the *Amer. Hist. Rev.*, ix. 670-695, to which the reader has already been referred.

<sup>4</sup> *Hist. of Engl. Law*, loc. cit.

<sup>5</sup> *Dom. Bk. and Beyond*, 304-309.

<sup>6</sup> *Engl. Hist. Rev.*, v. 625 ff.

<sup>7</sup> Toller Bosworth, *Anglo-Sax. Dict.*, s.v. Dreng, citing *Byrhtnoth's Death* (A.D. 991) and *Layamon's Brut* (A.D. 1200-1204).



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may have borne to the more familiar term thegn does not appear. Hinde thought that the two were the same.<sup>1</sup> Spelman, followed by the editors of Du Cange, suggested a Danish origin, which seems the more probable as there is a cognate Danish word having an appropriate sense, and as the earliest example of the use of the word in England, which the Toller-Bosworth dictionary can cite, is as late as 991.<sup>2</sup> One phase of Anglo-Saxon drengage must be emphasized. The dreng was by no means a base or agricultural tenant, but rather a person of condition. This is illustrated by a passage in Symeon of Durham's *Historia Regum* relating to the translation of the body of Bishop Alchmund of Hexham, in the year 1032. The event was naturally one of local importance, and it is to be remarked that the chief figure in the transaction, the director as it were of the whole business, since he was made the object of no less than two visions, is described as a certain dreng, 'quidam Dregno.' Symeon lets us see him, moreover, as a personage in the community, 'eum omnes vicini sui in magno honore habebant.'<sup>3</sup>

The drengs of Domesday Book have been sufficiently described by Professor Maitland in the essay already cited. But the Durham records illustrate the survival of this class in a region not included in the Great Survey. An English charter of Bishop Ranulf Flambard (A.D. 1099-1128) is addressed to all his thegns and drengs of Islandshire and Norhamshire.<sup>4</sup> Then there is a curious document which, although it has reached us by devious ways and in its present form is certainly post-Conquest, may still be cautiously admitted as casting some light on the subject in hand. This is a memorandum that stood at the head of a Durham gospel book that has now perished, recording the 'consuetudo et lex sancti patris Cuthberti . . . antiquitus instituta.' Before the solemn celebration of the feast of St. Cuthbert, in September, 'omnes Barones, scilicet Teines et Dreinges, alique probi homines, sub Sancto prædicto terram tenentes' assembled at Durham to renew and confirm the peace of St. Cuthbert.<sup>5</sup> The point need not be further laboured; it is clear enough that up to and at the time of the Conquest the drengs were persons of social consequence.

<sup>1</sup> Hodgson, *Hist. of Northumb.*, i. pt. 1. 253 ff.

<sup>2</sup> Spelman, *Gloss. Arch.*, s.v. Drenches; Du Cange, *Gloss.*, etc., s.v. Drench.

<sup>3</sup> *Symeon of Durham* (Rolls Ser.), ii. 47-50. See Mr. Arnold's editorial note in which he describes the drengs as 'a class of respectable franklins introduced into the country by the Danish conquest.' But I cannot agree with his further statement that their services were civil, not military: cf. Robertson, *Historical Essays*, Introd. xlvi.

<sup>4</sup> *Feod.* 98, note; also printed in Surtees, *Durham*, i. App. cxxv. No. 1, and by F. Liebermann, in *Archiv für das Studium der neueren Sprachen und Litteratur*, Bd. cxii. hft. 3-4.

<sup>5</sup> *Hist. Dunelm. Script. Tres.*, App. ccccxxx., No. ccccxxxii. The gospel book containing this entry is described as an offering of King Athelstane to St. Cuthbert, and was certainly earlier than the Norman Conquest. A record of its donation is preserved in the compilation called the *Historia de Sancto Cuthberto*, which dates from the first quarter of the eleventh century (Surtees Soc.), p. 149. It passed from Durham into the Cottonian collection and was destroyed, or nearly so, in the fire of Ashburnham House in 1731. See the report of the commissioners appointed to examine the Cottonian manuscripts after the fire, in *Reports from Committees of the House of Commons* (reprinted, Lond. 1803), Misc. 1715-1735, i. 471. The manuscript in question was classed as Otho B. IX. The entry cited in the text had been copied by John Rowell into the register of the Dean and Chapter of Durham, and in 1715 this copy was collated with the original by Mickleton, the Durham antiquary; see Canon Raine's note in *Scriptores Tres.*, loc. cit. This is not the place to enter into the 'Quellenkritik' of this curious document, but it may be remarked that, whatever the date of the form (and it is manifestly post-Conquest), the assembly described in it cannot be older than A.D. 991, the year of the translation of the body of St. Cuthbert, the event commemorated by the September feast; see *Acta Sanctorum Bollandiana*, Septembris Tomus Secundus, 2; Martii Tomus Tertius, 126. The existence of the special peace or grith might safely be referred to a somewhat earlier period.

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There is an odd story preserved by Spelman, which although as it stands it can have no value as evidence, yet seems to contain the root of the matter, the fact, namely, that the post-Conquest drengs were the descendants of those Englishmen who for one reason or another were not dispossessed by William, but transmitted their lands to their sons on the terms on which they had received them from their fathers.<sup>1</sup> To what extent, if to any, these men were touched by the great homage of 1085 cannot be determined.

Returning to the field of well-attested fact we find that after the Conquest the drengs of the bishopric were maintaining this tradition of social consequence in spite of certain incidents of tenure which would seem to approach them to the villein class. Our earliest pipe-roll shows that the keepers of the temporalities accounted separately for the manorial payments and those due from the drengs and malmen of the manors under their charge.<sup>2</sup> Then when the bishopric was again in the king's hand in 1197 and the keepers were rendering an account of the tallage of the manors of the bishopric, the quota of the drengs and farmers was again entered separately.<sup>3</sup>

Boldon Book discloses the details of drengage in the second half of the twelfth century. The incidents of the tenure at this time may be arranged in three classes consisting respectively of personal services, money payments and occasional obligations. Under the first of these week-work and boon-days such as the villeins gave occur in all cases but one,<sup>4</sup> but these are commonly rendered by the dreng's men or his 'whole household except the housewife.' Carting of some kind, generally of wine, was also quite usual.<sup>5</sup> Probably the incidents most characteristic of drengage were the duty of taking part in the bishop's hunt, the 'magna caza,' including the provision of a horse and a dog, which had to be cared for throughout the year, and the obligation of carrying the bishop's messages. 'Drengus pascit canem et equum, et vadit in magna caza cum ii leporariis et v cordis . . . et vadit in legationibus'<sup>6</sup> is a characteristic entry that frequently recurs, so frequently, indeed, that Mr. Seebohm was led to disregard the other incidents of the tenure.<sup>7</sup> But, as we have seen, men who were not drengs were holding by services in the hunt and the forest, and drengage had other attributes. This duty of going the bishop's errands, for example, appears at once as a survival connecting the twelfth-century drengs with the riding-men and radchenistres of an earlier time. This connexion is strengthened when we find that in some cases the dreng was required to render what, under the name 'utware,'

<sup>1</sup> Spelman, *Glossarium*, s.v. Drenches; Ibid. *Historia Familiæ de Sharnburn*, in *Reliquiæ Spelmannianæ* (Lond. 1723, pp. 189-200); Du Cange, *Gloss.* s.v. Drench. The manuscript in question, written in a sixteenth-century hand, seems now to be in the Ashmolean collection; its spuriousness has long been recognized; see *Hist. of Norf.* (10 vols., Norwich, 1781 ff.), s.v. Smithdon, ix. 80-82; Francis Blomefield, *Norfolk* (11 vols., Lond. 1805-1810), x. 350-353; David Hume, *Hist. of Engl.* (ed. Oxford, 1826), note H., i. 425; Joseph Nicolson and Richard Burn, *Westmor. and Cumb.* (2 vols., Lond. 1777), i. 22. There was much speculation in the twelfth and thirteenth centuries as to what effect the Norman Conquest might have had upon the status of non-combatants, and a tendency may be discerned to account for tenurial peculiarities by the survival of such persons; cf. *Dialogus de Scaccario*, I. x. (ed. Hughes, Crump and Johnson), p. 100, and the learned note of the editors, pp. 194-196; *Bracton*, fol. 7, cited in Vinogradoff, *op. cit.*, 121-126. Professor Vinogradoff argues that the privileged villeins on ancient demesnes represent a survival from Anglo-Saxon times, a case exactly parallel to the traditions recorded in the text.

<sup>2</sup> Pipe R. 31 Hen. I. in *Boldon Book* (Surtees Soc.), App. p. iii.

<sup>3</sup> Pipe R. 8 Ric. I. in *Boldon Book* (Surtees Soc.), App. p. vii.

<sup>4</sup> e.g. Oxenhall, Great Haughton, Whessoe, Sheraton. The exception is Thornton, where it is expressly stated that the men are to come out for week-work from every house 'excepta domo drengi.'

<sup>5</sup> e.g. Herrington.

<sup>6</sup> Banchester.

<sup>7</sup> Seebohm, *Village Community*, 71.



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seems to have been a form of military service and a survival of the ancient obligation of the 'fyrd.'<sup>1</sup> Finally, the dreng owed suit at the bishop's court.<sup>2</sup> Under the second head, money payments, we find two varieties of obligation, the one a fixed charge, like a ferm or rent, the purpose of which is not specified, and the other the render of occasional 'auxilia.'<sup>3</sup> At Whessoe Robert Fitz-Meldred, who held a carucate as the fourth part of a drengage, rendered 10s. 8d. Finally, under the third head, tenure of this sort was subject to a group of very interesting obligations. The first of these is the familiar feudal incident of wardship, which as we know may be carried back to the Conquest.<sup>4</sup> At West Auckland 4 bovates which Elstan the dreng had held are in the Bishop's hands, 'donec filius Elstani sit adultus.' The Bishop has allotted to Elstan's wife 'xii acras quietas ad pueros suos alendos.' The rest of the land pays 13s. and renders the services which used to be exacted of Elstan.<sup>5</sup> Then, in striking contrast to the feudal incident of wardship, are merchet, heriot, and metred or metriz, all of them characteristic attributes of villein tenure. The nature of merchet and heriot has been much discussed, many illusions, some of them mischievous ones, have been dispelled, and the truth of the matter seems now pretty well established. Briefly, merchet was a payment made to the lord for leave to marry one's daughter outside the estate, for the lord must be reimbursed for a transaction by which he lost a dependent tenant the possible mother of villeins. Heriot, on the other hand, which commonly consisted of the best beast rendered to the lord by the heir on behalf of his deceased predecessor, looks back to a time when the dependent had received chattels or stock from his lord, and although it attached itself to the soil is quite distinct from feudal relief.<sup>6</sup> Metred in this connexion has reference to the 'vacca de metride,' the milch cow which the cornage-paying vills were obliged to render to the bishop. The dreng would be required to pay his share of the composition which was generally being substituted for the render of the beast itself. Now these terms do not occur in connexion with drengage in Boldon Book, but we can scarcely doubt, none the less, that the drengs of the bishopric were subject to the obligations which they represent. Across the Tyne the drengs of Northumberland did not escape them.<sup>7</sup> Then they occur in a Durham charter, which however lacks the name drengage. In this prior Laurence (A.D. 1149-1154) conveyed the land of Pache in Monkton to a certain Roger. The passage must be quoted, the

<sup>1</sup> 'Willelmus . . . facit quartam partem unius dringagii . . . et facit utware quando positum fuerit in episcopatu,' Oxenhall; cf. *Feod.*, 129n, 132-133nn, 141; *Newminster Chartulary* (Surtees Soc.), index s. v. Utware. Professor Maitland has discussed the term in *Engl. Hist. Rev.*, v. 625 ff. Professor Vinogradoff, however, takes a different view, arguing that the inland (demesne) was quit of taxation in view of certain specifically aristocratic functions which its lord had to perform, while the outland bore the burden of taxation. Then the king's utware would be what the king got from the utland, i.e. geld. See *The Growth of the Manor*, pp. 226-7, 284.

<sup>2</sup> e.g. Great Usworth, Herrington, Butterwick, Brafferton.

<sup>3</sup> See Prior Bertram's charters, in *Feod.*, 114n, and cf. *Testa de Nevill*, 752.

<sup>4</sup> Maitland, *Dom. Bk. and Beyond*, 310.

<sup>5</sup> Cf. *Registrum Palatinum Dunelmense* (Rolls Ser.), iii. 62. In 1302 it was provided that the bishop should have wardship of only such tenements in drengage as are held of himself and the prior. This is peculiarly interesting, because there is good reason to believe that in the neighbouring county of Northumberland drengage tenure was not a cause of wardship. See *Northumb. Assize R.* (Surtees Soc.), 223-224, 237, and the discussion of the case in *Amer. Hist. Rev.* ix. 680-681.

<sup>6</sup> Pollock and Maitland, *Hist. of Engl. Law*, i. 293-298, 354-356; Vinogradoff, *Villainage*, 153-156; *Year Book*, 15 *Edw. III.* (Rolls Ser.), Introd. xv.-xliii.

<sup>7</sup> *Testa de Nevill*, 389.



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land is to be held 'per hanc convencionem scilicet quod pro tota hac terra simul reddet 16*d.* ad Rogaciones et 16*d.* ad festum Sancti Martini et pro cornagio dabit 2*s.* in anno, scilicet ad festum Sancti Cuthberti, et pro metreth quantum ad eandem terram pertinet, ad festum Sancti Martini; quater in anno herciabit pro prædicta terra et semel arabit pro ipsa in anno i die tantum et ipsam quam aravit terram herciabit; in messis tempore iiii diebus metet cum ii hominibus singulis diebus . . . pro heriet dabit vi oras, pro merchet vi oras et pro forisfacto vi oras in misericordia; de utware adquietabit ipsam terram quantum ad eam pertinet.'<sup>1</sup> There can be no doubt that we have to do here with a drengage tenure.

The amount of land held on these terms, the content of a normal drengage tenement, is a perplexing point. We have seen that at Whessoe Robert Fitz-Meldred's holding of one carucate was reckoned as the fourth part of a drengage, and with that evidence alone one would be tempted to say that a normal drengage ought to contain 4 carucates.<sup>2</sup> But the mischance of those who have attempted to specify the content of a knight's fee teaches one caution, and on turning to another part of Boldon Book we see that Elstan had been a full dreng at West Auckland although he held but 4 bovates. In truth there was no normal drengage holding; on the one hand we may read how at Escomb Elzibrid holds one half a bovat in drengage and pays 9*d.* cornage, and on the other how William holds the vill of Oxenhall and does the service of the fourth part of a drengage. Or again we have the evidence of a later record, which shows that Robert Binchester holds Binchester and Hunwick 'per cartam Domini Episcopi per servitium forinsecum, quondam tenetur in dryngagio per librum de Boldon.'<sup>3</sup> A drengage tenement then might consist of an entire vill or of an allotment of land in a vill.

From this evidence we have been able to form a consistent notion of the obligations and incidents of drengage tenure. From the feudal point of view it must, indeed, have been perplexing enough, showing as it did attributes of military, socage, and unfree tenure.<sup>4</sup> If we step backward, however, into a remoter age, the relation becomes natural and consistent.

As Professor Maitland has pointed out, this kind of relation existed and was understood in the pre-Conquest period. Tidings of the same sort of thing come to us from Frankland. In the eighth and ninth centuries free-men were holding 'beneficia' for which they performed not only the riding-service which Bishop Oswald required of his Worcester tenants, but agricultural labour as well, carting, mowing, and the like, with their men, and rendered money payments. These holdings were, moreover, sometimes an entire vill, sometimes an allotment of land in a vill, but in the latter case the tenant performed his services independently of the agricultural community, not in

<sup>1</sup> *Feod.*, 114 n; cf. *ibid.* 27, 40, 42, 64, 66 n, 68 n, 70 n. On the ora, which was a Scandinavian reckoning, cf. Seebohm, *Tribal Custom in Anglo-Saxon Law*, 234-237. For a case of heriot in 1368, see *Durham Halmote Rolls*, i. 75.

<sup>2</sup> So Robertson, *Historical Essays*, Introd. xlvii.

<sup>3</sup> *Hatfield's Survey* (Surtees Soc.), 34; cf. the case of Whitworth, which Thomas de Acley was holding as the fourth part of a knight's fee by the charter of Bp. Philip of Poitou; the bishop had transmuted Thomas's drengage into military service, *Boldon Book* (Surtees Soc.), App. No. vi.

<sup>4</sup> There is evidence that in the twelfth century land held in drengage, like that held in villeinage, was subject to conveyance 'per baculum.' See *Feod.*, 141-142 n. But this, it has been strongly argued, may even in the case of villeinage be regarded as a mark rather of the antiquity than of the unfreedom of the tenure; Vinogradoff, *op. cit.* 371 ff.

co-operation with it, although his land in the open field might be intermixed with theirs.<sup>1</sup> I do not, of course, intend to identify pre-Conquest drengage with the Frankish 'beneficium,' but merely to suggest that in the eighth, ninth, and tenth centuries relations of a strikingly similar nature existed between the owners and occupiers of land on the Continent and in England.

Now returning to Boldon Book we find that there are twelve vill held in drengage and thirteen others containing drengs, generally only one, although there are two at Great Haughton and eight at West Auckland.<sup>2</sup> We have argued elsewhere in respect to cornage that that due became a real burden, and that when a cornage-paying tenement or vill passed into the hands of a free tenant he became at once a sort of middleman who collected and turned over to the chief landlord the render that was always due to him, that the mesne lord always owed him no matter into whose hands it might have come. Keeping in mind the position of the early bishops as great immunists, standing on the doubtful border between landlordship and sovereignty, and the special situation of the pre-Conquest drengs, it may be possible, provisionally at least, to extend this reasoning so as to cover all the servile incidents of drengage tenure. Thus if a dreng received an entire vill he would become answerable to the bishop, though scarcely in his own person, for part at least of the services which the villeins used to render their lord. This would constitute a restricted form of gift or loan by which the lord reserved not only his rights of regality but part of his domanial profits as well. Then where the grant consisted only of certain lands in a vill the same system could still be applied, although in either case the special services and special status of the dreng would distinguish him from a mere predial tenant as much as the predial aspect of his tenure set him apart from the more purely military land-borrowers or land-holders of the bishop. Something of this sort is suggested by the texts which we have already considered. The Pache charter shows us the prior's tenant assuming a good many agricultural duties and agreeing to pay a money composition for others; and yet in common reason we must suppose a fair margin of profit for the tenant himself. Then in Boldon Book we have the case of Sheraton. The vill is divided into two parts; John holds one of them for three marks 'and is quit of the works and services which used to be performed for the half of that drengage for Crawcrook which he quit-claimed to the bishop.' Thomas holds the other half of the vill, and it is a fair inference that he is answerable for the other half of the drengage. Let us see what is required of him. He renders 30s. cornage and half a milch cow and half a castleman and four scot-chalders of malt, meal, and oats respectively. Compare this with the obligations of the Boldon villeins and it will be seen that Thomas is answering to the bishop for certain

<sup>1</sup> See an instructive presentation of this matter in, G. Seeliger, *Die soziale und politische Bedeutung der Grundherrschaft im fruheren Mittelalter*, 27-44. Waitz, Roth, and Brunner, in their treatment of the 'beneficium,' do not develop the aspect of the question which is of importance for our subject, and which Professor Seeliger has well emphasized.

<sup>2</sup> The fact that the vill enumerated in the first list were held in drengage is a fair inference from their services described in Boldon Book, particularly as both that record and Hatfield's Survey explicitly describe two of them—Oxenhall and Sheraton—as held in drengage. With regard to the second list, Boldon Book is explicit in all cases except West Auckland and Carlton, where we have to supplement its information from Hatfield's Survey.

I. Plawsworth, Little Usworth, Washington, Little Burdon, Twisell, Oxenhall, West Thickley (Nova villa, juxta Thickley), Luttrington, Henknoll, Cornsay, Helley, Sheraton.

II. Great Haughton, Whessoe, West Auckland, Great Usworth, Herrington, Hutton, Sheraton, Butterwick, Brafferton, Binchester, Urpeth, Carlton, Thornton.



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profits that the villeins used to render. But there is a margin of profit for Thomas. His tenants must, we are told, perform certain specified works for the bishop which fall far short of what he was getting at Boldon. We must not, of course, lay too much stress on evidence of this sort, which marks at best a survival, but we may still find it significant in helping us to frame a consistent notion of what this relation might have been in its prime. A little more help may be forthcoming if we turn our eyes to the Continent again and recall some of the attributes of an extensive class which in Germany was embarking on a career of successful growth just as the English drengs were declining and disappearing. The 'ministeriales' or 'Dienstmannen' of the German kingdom may be defined by a paradox if we call them unfree knights. Their history begins in personal servitude and ends in assimilation to the great order of knighthood.<sup>1</sup> Their status on the one hand is marked by the legal proverb 'Dienstmann ist nicht Eigen.' Yet in the time of their development in the eleventh and twelfth centuries we find them holding allodial land, owning serfs,<sup>2</sup> and even exhibiting a certain feudal capacity. Their great advantage lay in the character of the services with which they were especially charged, suit of court, namely, and fighting. For these purposes the German lords found that unfree persons were at once more manageable and cheaper, and were willing therefore to grant them many privileges. But these particular services have a distinction of their own, and what was better, they have a public-law quality. Again, in Germany there was no strong normalizing central government eager to stretch all existing institutions on the Procrustean bed of its own system, and feudalism organized itself by a more evolutionary process than was the case in England. So it fell out that just as the Dienstmannen were securing their position by getting their privileges written down and people were beginning to recognize a 'jus ministeriale,'<sup>3</sup> a movement in the opposite sense was going on in England among a similar class of persons, and the drengs disappear rapidly, partly by absorption and partly by transmutation. The Norman Conquest, as we are coming to recognize, blocked many lines of development, opening instead of them other paths leading to the same end. Thus the development of drengage was interrupted and for the more part the institution became of no consequence. The goal was reached by another process, which resulted in serjeanty and free socage. Drengage became a mere curious survival, kept alive partly by the

<sup>1</sup> The older learning on this subject, including many texts, may be found in Waitz, *Deutsche Verfassungsgeschichte*, v. pp. 289-350, 428-442; the newer literature and criticism is well summarized in Schröder, *Lehrbuch der Deutschen Rechtsgeschichte*, 4 ed. par. 42. A brief and useful account in French may be found in Blondel, *Frédéric II.*, etc., 80 ff.

<sup>2</sup> There is a case of a Northumbrian dreng in the thirteenth century having both free and bond tenants, *Northumb. Assize R.* (Surtees Soc.), p. 46; *Hist. of Northumb.* (Co. Hist. Com.), i. 209-212.

<sup>3</sup> This phrase may possibly afford us a valuable clue. If we regard the thegn as originally a domestic soldier and the development of the class as a movement from unfreedom in the household of a lord toward free service on land granted by that lord, then we may perhaps regard the class of drengs as having much the same origin, although later in time, a second wave as it were. We should then regard the Norman Conquest as having arrested the development of the drengs before they had secured themselves by a written dreng-law. This is not pure hypothesis. Alfred described as thegns a class of men whom Bede would call now 'miles' and now 'minister,' and the Anglo-Saxon laws from Wihtraed to Knut furnish security enough for the rights and position of the whole class. Then the fact that drengage is found only in the northern counties goes to support our suggestion that it was due to a recurrence of earlier conditions, for that is after all what the Danish settlements brought about in England. This is merely thrown out as a suggestion. The post-Conquest thanes and thane land need careful examination. But see a stimulating and instructive passage in Guilhaume, *Ordonnance de la Noblesse en France*, pp. 86-96.



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obstinate conservatism of the English, but mostly by the slow and at first only superficial feudalization of the northern counties, which, as we shall argue hereafter, did but draw a veil between the king's eyes and the actual conditions in this region.

We have been speaking of whole vills held in drengage of the Bishop by great persons. Where the tenant and the tenement were smaller the process would be somewhat different. Either there would be a deliberate extinction of the drengage for a consideration, a transaction of which we have a number of examples,<sup>1</sup> or else there would be a gradual assimilation of the dreng to the free tenants of the manor in which his land lay. The steps of this process escape us, but the result is pretty evident to anyone who will compare the Boldon Book with Hatfield's Survey.

Returning to the miscellaneous population of the vill, we have next to consider a class of persons having relatively large holdings which are burdened with no obligation except that of a money rent. At Boldon, for example, Robert holds 36 acres reckoned as 2 bovates and renders a half-mark. At Stockton, again, Adam son of Walter holds 1 carucate and 1 bovat and renders 1 mark; at Wolsingham, William the priest holds 40 acres and renders 1 mark, and so on. These holdings we may suppose to be either very recent grants, by which the bishop had conveyed villein land to free persons upon special terms, or again they may be the outcome of progressive money compositions for renders and services which had at length been completely successful, an hypothesis which would, of course, leave open the question of status. The first assumption receives some corroboration from the case of Simon the doorward (*hostiarius*), who is recorded as holding 60 acres at Heighington and rendering 1 besant. This grant was probably made at the close of Bishop Pudsey's pontificate, but there is no reason to suppose that similar grants might not have been made at an earlier period and duly recorded in the first recension of Boldon Book. The indications are that this Simon was a person of consequence and certainly of free condition<sup>2</sup>; for he is elsewhere recorded as holding by knight service.

The existence, on the other hand, of a class of persons having holdings of the same order as those now occupying our attention, and not only paying a money rent but rendering services as well, points to a progressive composition for services and renders which would in the first case be complete, and in the second either arrested or still going forward. It is possible that members of this class represent the free tenants of the later manor. The priest mentioned in the Wolsingham entry we have just now quoted was of course a freeman, but the conditions of Adam's tenure at Stockton do not differ from those of the priest. Regardless also of the status of the tenant, the land that paid rent but did no work was reckoned free land.<sup>3</sup> This of course would work both ways, but at least it leaves room, as it seems to me, for the possibility that most of these tenants were free.

It has been said by a writer well qualified to speak on this subject, that 'in a vast majority of cases rent-paying land retains some remnants of

<sup>1</sup> Vid. inf. pp. 312-5.

<sup>2</sup> Vid. inf. pp. 321-5. On the office of doorward cf. Larson, *The King's Household in England before the Norman Conquest*, Madison, 1904, p. 181, and the literature there cited.

<sup>3</sup> Cf. Vinogradoff, *Villainage*, 167-171.

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services,'<sup>1</sup> and this is the mark of our third class, which consists of those who pay rent and render some service as well. Their position may be illustrated by the citation of a few typical cases. At Norton, Alan of Normanton holds 1 carucate. He pays 10s. rent, finds thirty-two men to work one day and four carts for carting hay and corn respectively for one day, and his tenants, if he have any (*si homines habuerit*), do four boon-works in the autumn.<sup>2</sup> At Burdon, Amfrid holds 2 bovates and renders a half-mark and goes on the bishop's errands. At Stanhope, which it will be remembered was a forest vill, somewhat the same case presents itself under rather different conditions. The sons of Gamel of Rogerly hold 60 acres, they pay 10s. rent, find one man for service in the forest and themselves go on the bishop's errands. At the same place Belnuf del Peke holds 60 acres, he pays a half-mark, finds a man for service in the forest and goes on the bishop's errands, but his heirs when they succeed him must pay 1 mark, and this appreciation of rent is provided for in several other cases. Tenures of this sort are not likely to have been created by direct or recent grant, but look rather like an evolution by means of composition from earlier conditions. It is conceivable that this class too may have contributed some of the free tenants of the later manors.

A fourth class consists of the holders of ministerial tenures, who were not villeins. The ordinary manorial practice was of course to fill the offices of reeve, pinder, smith, and so on, with unfree tenants, who, although they might not refuse the charge, were still furnished in return for their labours with a small holding (generally from 6 to 12 acres) free of rent and service. We shall speak of this arrangement presently, but here we have to deal with certain exceptions to the rule, numerous enough indeed to constitute a class by themselves. Thus at Great Houghton the son of Aldred holds 40 acres, he renders 2s. and goes on the bishop's errands. But his chief service is the superintendence of the works which the villeins were obliged to perform for the bishop; '*debet esse super precationes*' is the phrase. Now we know that in other parts of England services of this kind were performed by free-men,<sup>3</sup> and we know further that Aldred's son was not a villein, but practically of free condition, for Boldon Book explicitly states that he held his 40 acres in exchange for other land in the same vill which his father had held in drengage, but which he had surrendered to the bishop to receive his present holding, '*ita libere tenendis*.' There are a number of instances of this sort of free ministerial holding, and they are by no means confined to those who still belong to or have just emerged from the class of drengs. Thus at Middridge, Wekeman holds a half-carucate, he renders 6s., does three boon-works, goes on the bishop's errands, does one day's ploughing and harrowing, one day's mowing and two days' carting of hay and corn, '*et est super precationes*.' Then there is the case where the services are unspecified. At Wolsingham, William of Guisbrough holds 30 acres for which he ought to pay 10s., but he is quit of this rent, '*dum est in servicio Episcopi*.'

It is evident that these tenants whom we have been considering are in respect to their social and economic, and probably to their legal status as well, superior to the villein community. We have now to take account of another

<sup>1</sup> Vinogradoff, *op. cit.* 171.

<sup>2</sup> At Preston there are three tenants holding on the same terms as Alan of Normanton.

<sup>3</sup> *Domesday of St. Paul's* (Camden Soc.), 76-77; *Rot. Hundred*, ii. 764b, both cited in Vinogradoff, *Villainage*, 202; cf. *ibid.*, 407.



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group, which in turn will be found in these respects inferior to that community.

In the first place there are a few persons who appear to be holding their scraps of land on sufferance.

Thus at Stanhope three widows hold 3 tofts of the bishop's alms, and at Lanchester the wife of Geoffrey the priest has 1 toft and 8 acres on the same terms. At Stanhope again, Ralf has 12 acres at the bishop's pleasure, for which he renders 3*s.*, and at Witton, Hugh holds 2 acres at the bishop's pleasure without render.

There are certain persons again having pretty small holdings, for which, however, they give no service, but pay rent only. This land also seems always to be a new intake, or at least to be arable, that lies outside the open-fields of the village. Thus at Lanchester, Orm holds an assart of  $8\frac{1}{2}$  acres for which he renders 2*s.*; at Bedlington, Robert Hugate holds 21 acres which were formerly waste, and renders 40*d.*; at Norham, Isaac has 1 'cultura'<sup>1</sup> for which he pays a half-mark, and so on. These men would appear to correspond to the 'hospites' of the French and Norman manorial records, colonists who have been invited or permitted to settle. They transmit their holdings hereditarily, but are shut out from the use of the meadows, pastures, and other commons that form part of the villein's 'Ideal-antheil.'<sup>2</sup> Persons of this class were not unknown in other parts of England. In Domesday Book they are recorded as existing on the Welsh Marches,<sup>3</sup> and we should naturally expect to find them in the Scottish Marches as well. Perhaps in the present case we must regard them as something between the duly invited 'hospes' and the squatter whose presence is tolerated for the sake of the new land which he brings under cultivation.

Under this second category we may also bring those persons who have a small holding, generally less than a bovaté, for which they render a little money and a little service. At first they seem not to differ, either in respect to the size of their holdings or the nature of their obligations, from the normal cottier of whom we have been speaking. But the circumstance that the tenants under consideration are entered in Boldon Book, individually, by name, while the cottiers occur in groups with uniform holdings and duties like the villeins, warns us that there is some distinction, and suggests at the same time that the difference must probably be referred to the origin of the tenure. The conjecture that they began as squatters on uncleared, or at least untilled, land would fit the case well. At Stanhope, a forest vill, where there would be plenty of land to take up in this way, we find a whole group of them. Ralf holds 1 toft, renders 4*d.* and does four boon-works. Goda also has a toft, she renders 10*d.* and does four boon-works, and so on. At Wolsingham, Walter Croke holds 6 acres and renders 3*s.* 2*d.*, he goes on the bishop's errands and superintends the mowing and reaping works as well. At Escomb, Ulf Raning holds 5 acres, and renders 4*s.* and does 4 boon-works, and so on.

Although Boldon Book does not record the existence of any entirely

<sup>1</sup> It is difficult to find a good translation for this word or clear proof that it means, as I have no doubt it does, any arable land not included in the open-fields; cf. Maitland, *Dom. Bk. and Beyond*, 380, referring to the Ramsey Cartulary.

<sup>2</sup> Cf. M. Kovalevski, *Die ökonomische Entwicklung Europas*, ii. 414-418.

<sup>3</sup> *Dom. Bk. (Rec. Com.)*, i. 259 bis, cited by Maitland, *Dom. Bk. and Beyond*, 60.



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unfree persons, it still affords indirect evidence that personal servitude existed in the bishopric at this time, and continued to exist there at least as late as the middle of the thirteenth century. From the outlying districts of Norham and Bedlington, both locally within the county of Northumberland, we get indications that Bishop Pudsey had been setting his bondmen free. At West Sleekburn, in Bedlingtonshire, Turkill, who had been 'the bishop's man,' renders 12 hens 'de acquietatione sua erga Episcopum,' and there are similar cases at Netherton and Cambois. Then from the interpolations in the text of Boldon Book we find that Bishop Walter de Kirkham (1249-1260) 'absolvit Johannem filium Thomæ de Bedlyngtona imperpetuum a servitute,' and that in that bishop's time John son of Eustace and Alexander his brother of West Auckland, 'qui fuerunt irretiti de servitute, quieti sunt per patriam.' Still the silence of Boldon Book on the subject must be taken as evidence that the absolutely unfree could neither have been very numerous nor of any great economic importance in the second half of the twelfth century.

From the rural population, the men who occupied and cultivated the bishop's land, we turn to study the land itself. We shall expect, and we shall not be disappointed, to find it arranged in the familiar categories of arable (including demesne and land in service), meadow, pasture, waste and forest. Further, too, we shall ask about the stock and the improvements, the mills, bakehouses, fisheries, the beasts and the instruments of tillage. All these we shall pass in rapid review, endeavouring rather to emphasize those points at which the Durham villis departed from the usual custom than to give a detailed and methodical account of the whole matter. This course is indicated partly because, as in the case of the rural population, such accounts exist, and partly because the material yielded by Boldon Book is very often meagre and the comparative method is in the present circumstances not admissible.

To begin then with the arable, we find the usual distinction between 'terra dominica' and 'terra servilis,' although these convenient terms do not actually occur. It appears also that as was general in other parts of England<sup>1</sup> the demesne was composed partly of separate closes and partly of intermixed strips in the open-fields. At the recently erected borough of Gateshead the burgesses held three parts of the arable land at a money rent; 'the fourth part of the arable land with the assarts which the lord bishop caused to be made and the meadows are in the hand of the lord bishop, with the stock of two ploughs.' An even better example comes from Lanchester, where it is noted at the end of the entry, 'moreover 5 bovates of villeinage are waste and 18 acres which used to be of the demesne.' Then if we turn to such an entry as that which occurs at Houghton, 'the demesne of three ploughs and the sheep with the pasture are in the bishop's hand,' we shall see that the demesne consisted of something more than arable land. It included indeed pasture and woodland, stock, and of course buildings of various sorts, but these will be considered in another connexion.

We must notice next that in many cases the demesne was common to two or three villis, or, to put it more logically, that two or three villis were dependent on a single demesne. This point has already been treated in connexion with the development of the manor, and here it need only be

<sup>1</sup> A. H. H. A. H. H., *Economic Hist.*, i. 7; Vinogradoff, *Growth of the Manor*, 312-313, 330-331.

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recalled to the reader's memory. There were some villis on the other hand that seem to have been dependent on no demesne at all. We have seen this in the case of the villis containing farmers only, which we conjectured had developed out of settlements on the bishop's demesne lands, but it is true also of some of the villis that were farmed to the villeins, such as South Biddick. At Ryton on the other hand it is expressly stated that the villeins farmed the demesne as well as the vill.<sup>1</sup>

With regard to the 'terra servilis,' we have no reason to believe that the distribution of the arable among the villeins in equal heritable holdings in the open-fields differed in any essential from the now familiar system that obtained throughout the greater part of England during the Middle Ages. As in other northern documents the terms 'carucate' and 'bovate' replace the 'hide' and 'virgate' of the southern counties, but the virgate also occurs. Boldon Book affords only one or two direct notices of the open-fields. At Norton and Hertburn the cottiers hold beside their tofts and crofts certain acres 'in campis.'<sup>2</sup> With regard to size, the normal villein holding was the yardland or virgate, containing commonly 30 acres. In Boldon Book this is generally expressed in terms of bovates or oxgangs, containing as a rule 15 acres each. But within moderate limits the content of the bovatē varied considerably, and the number of acres is generally expressed in the record. Thus at Lanchester the bovatē contained 8 acres, at Morton 12, and at Whitworth 20, but at Boldon, where we may look for the normal holding, every villein had 2 bovates of 15 acres each. Pursuing our inquiry further, we discover that the rule which assigns to every villein a symmetrical holding is by no means without exception. At New Ricknall the bovatē contained but 10 acres, and the villeins had only one apiece, but even then an equality might be preserved among themselves. At Lanchester, however, there were 41 bovates held by 10 villeins; as the bovatē there contained but 8 acres, four apiece would give the villeins the normal holding of 30 acres and a trifle over. How, we may ask, was the remaining acre disposed of? The question could not have arisen at the time of the survey, for a good part of the vill was waste, but at some earlier or later time it must have presented itself.<sup>3</sup> At Norton the villeins held 21 bovates; at Stockton, and here we have a clue to the difficulty, there were 16½ villeins holding 33 bovates. Now this might have been written another way; there are 33 bovates which the villeins hold, and they work and render on such and such wise, a form which actually occurs at Great Haughton, while at Whessoe we merely learn that there are 14 bovates, and each bovatē renders, etc., and at Wolsingham there are 300 acres which the villeins hold and they render, etc. It is clear then that the bovatē is less an actual area of

<sup>1</sup> This is particularly interesting in connexion with Professor Maitland's reading of a passage in *Dom. Bk.*, i. 1, 27b, cited in *Dom. Bk. and Beyond*, 119; villeins farmed the manor of Wellesdone from the Canons of St. Paul's, 'in dominio nil habetur.' In view of what has been shown in the text we shall infer that the last clause was added to note an exception, the manor had no demesne at all, and we shall hesitate to assume, as Professor Maitland seems to do, that there is no demesne *because* the manor is farmed by the villeins. The case of a north-country manor without demesne in the thirteenth century has recently attracted Professor Maitland's attention; cf. *Engl. Hist. Rev.*, xviii. 780, xix. 297.

<sup>2</sup> But see a very interesting description (A.D. 1392) of a tenement at New Stainton giving the location and boundary of every acre, *Feod.*, 164 ff.

<sup>3</sup> Perhaps it was 'lost.' There is a case of this kind in the *Domesday of St. Paul's*, 11, cited by Vinogradoff, *Villainage*, 233, and the thing occurred in the bishopric at a later time (1307), when the Receipt Roll contains this rubric, 'Defectus redditus terrarum relictarum et quæ non possunt inveniri, de quibus redditus levare non potest,' *Boldon Bk.* (Surtees Soc.), App. p. xxxvii.



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land than the basis or unit of villein service, and we ought probably to think of the villein holding 2 bovates as rather a group of several men in a household on the one hand, or on the other possibly as an indivisible and ideal part of a single man holding several virgates and concentrating in himself therefore several villeins. Again we find bovates of varying content in the same vill. At Boldon the villeins as we know held 2 bovates of 15 acres each, but a certain Robert held 2 bovates containing 31 acres, and rendered one half-mark but no service. At Cleadon, where the content of the villein bovat was the same as at Boldon, Kettell held 2 bovates, containing 34 acres. The natural inference is that we have to do in these entries with free men who are holding unfree land and holding it at beneficial rating, and we have some evidence pointing in this direction. According to the oldest text of Boldon Book, Geoffrey of Hardwick, 'tenet de terra de Nortona juxta Herdewyc xxxvi acras et reddit ii marcas quamdiu Episcopus voluerit.' But the later text, which took up changes that had occurred between the two recensions, gives a different tenant, Adam son of Geoffrey of Hardwick, who 'tenet de terra de Northtona juxta Heredewyc xxxvi acras, quæ nunc sunt lx acræ.'<sup>1</sup>

With regard to pasture, meadow and other commonable rights generally appurtenant to a servile holding, Boldon Book gives us very little information. But there is enough to make it clear that this omission does not mark the absence of these necessary parts of the village life, necessary because there could be no agriculture without plough-beasts, and the oxen required both pasture and hay. The ordinary pasture of the village was furnished by the field which in any given year chanced to be fallow, and the rest of the arable and the meadow as soon as they had been cropped and the enclosures removed. There would also be permanent pasture on waste and moor land.<sup>2</sup> The former of these we should scarcely expect to find in such a document as Boldon Book; its existence was understood, and there was no necessity for recording it. It figures prominently enough, however, in such records of the daily life of a village as the halmote rolls. There we may read of the allotment of the pasture among the villeins, of the wicked breaking-down of frithes in the pasture of a vill, of a man who for eight years had kept sixty sheep on the lord's pasture although he had no land, and so on.<sup>3</sup> The number of beasts anyone was allowed to keep on the common pasture was generally carefully proportioned to the size of his holding.<sup>4</sup>

The permanent pasture was commonly shared by two or more adjoining vills, as at Flakkesdon and Redworth or Cornsay and Hedley.<sup>5</sup> That this arrangement was general throughout the bishopric appears from a charter granted by Roger Bertram lord of Stainton to the prior and convent

<sup>1</sup> As to all this cf. Professor Vinogradoff's conclusion, 'that the hide, the virgate, the bovat, in short every holding mentioned in the surveys, appears primarily as an artificial, administrative, and fiscal unit which corresponds only in a very rough way to the agrarian reality,' *Villainage in Eng.*, 241. The whole subject is treated in a most illuminating fashion in the third essay in Professor Maitland's *Dom. Bk. and Beyond*; cf. Vinogradoff, *Growth of the Manor*, bk. ii., chs. iii. and v.

<sup>2</sup> Ashley, *Economic Hist.*, i. 7.

<sup>3</sup> *Dur. Halmote Rolls*, i. ; 12 Burdon, 16 West Merryngton, 20 Over Heworth.

<sup>4</sup> In a case that came up in 1342 between the prior of Launde and T. Basset of Welham it appeared that every virgate was allowed to turn out eight oxen, the rest of the pasture was reserved for the lord's agistment. *Year Bk.*, 16 *Edw. III.* (Rolls Ser.), ii., 162 ff.

<sup>5</sup> See Bishop Pudsey's charter in *Boldon Bk.* (Surtees Soc.), App. No. vii. On these inter-commoning vills, which were characteristic of northern England, cf. Maitland, *Dom. Bk. and Beyond*, 355.



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in which he stipulated, 'quod homines mei de Steinitune habebunt communem pasturam cum hominibus de Chettun, secundum consuetudinem, sicut habent aliæ vicinæ villæ in aliis vicinis locis.'<sup>1</sup> Still the rule was not universal. At Mainsforth, for example, 9 bovates 'jacent cum mora ad pasturam,' and Norton, as we have had occasion to remark, paid no cornage, 'pro defectu pasturæ,' which must mean that it had no permanent pasture. For the use of pasture of this kind, whether in moor or forest, the villeins appear to have paid a due known as herbage,<sup>2</sup> and a similar due known as pannage was exacted for the swine that were driven into the forest.<sup>3</sup>

Having examined the land and its cultivators, we may now turn to consider the rules which determined their relations, or in other words the manorial economy revealed to us in Boldon Book.

The fully developed manor of the thirteenth century was commonly administered on behalf of the lord by three different officers. There were the steward, who superintended a group of manors, the bailiff or head-man of a single manor, and the reeve, who was chosen by the dependent community from among their own number to act as their overseer and representative.<sup>4</sup> Neither the steward nor the bailiff occurs in Boldon Book, and there is no particular reason why they should. The reeve was, however, the most essential of all. His duties were many and various, and he received in return for his services an allotment of land, 'revelond' it was sometimes called, free of renders and services.<sup>5</sup> In Durham the pairs and groups of vills to which attention has already been called, shared a reeve between or among them, and in these cases the size of the reeve's holding appears to have been increased to correspond with the increase in his labours. Thus at Newbottle the reeve held 12 acres, which was the normal peasant holding at that place, but at Houghton, with which Wardon and Morton were grouped, the reeve held 2 bovates of 14 acres each. Still there are exceptions, as at Wolsingham, where Adam the reeve had but 6 acres, for which, moreover, he was obliged to pay 40*d.* At Stanhope again the reeve had a toft and croft and 6 acres for his services, but when he laid down the office he would be required to pay 2*s.* and do 4 boon-works every year. Next to the reeve the village officer of the most frequent occurrence was the pinder or pound-keeper, whose business it was to impound strange or wandering cattle. The pinder's services, like those of the reeve, were rewarded by an assignment of land, but the holding was commonly smaller than that of the reeve, generally 6 acres, as at Stockton, Wolsingham, and Stanhope. Where vills were grouped as in Quarringtonshire and Aucklandshire a single pinder served for the whole cluster, and received a proportionate tenement, 20 acres in both of these cases. This officer further received a proportion of the harvest, consisting of a certain number of sheaves, twelve, or in some cases twenty-four, for every plough. These were called thraves and served, as Canon Greenwell conjectures, for

<sup>1</sup> *Feod.*, 156-157 n.

<sup>2</sup> Adam, a tenant at Blackwell, renders 32*d.* 'pro herbagio de Balthela.' In 1307 the 'bondi' of Easington and Shotton rendered 53*s.* 4*d.* 'pro pastura de Schottonden per annum ad voluntatem Episcopi,' *Recceit Roll in Boldon Bk.* (Surtees Soc.), App. p. xxxi.

<sup>3</sup> See *Boldon Bk.* (Surtees Soc.), s. v. Lanchester; cf. Bishop Pudsey's charter to Alan de Chilton in *ibid.*, App. No. viii.

<sup>4</sup> Fleta, cited by Ashley, *Economic Hist.*, i. 10 ff.; cf. Garnier, *Landed Interest*, i. ch. xiv.

<sup>5</sup> Hale, *Domesday of St. Paul's*, introd. xxxvi; Ashley, *op. cit.* i., 11, ff.; Vinogradoff, *Villainage*, 157, 317-319.

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the support of the impounded cattle until they were released. On the other hand, the pinder was required to render the bishop a considerable number of hens and eggs, a due which does not seem to have had any relation to the size of his holding. Thus the pinder of Norton, who held 4 acres, rendered 80 hens and 500 eggs, while the pinder of Aucklandshire, who served 4 villis and held 20 acres, made precisely the same render. The only other village officers mentioned in Boldon Book are a bee-keeper at Wolsingham, who has 6 acres for his services, and a gardener at the same place, who has 5 acres on the same terms.

Turning from the land of the peasants to that of the lord, we find, as we should expect, that our information becomes more abundant and more detailed. The term 'demesne' included not only the lord's arable, but the meadows and pastures as well as the stock, instruments, and such banalités as mills and bakehouses.<sup>1</sup> At Little Haughton, for example, Adam de Selby farmed the demesne from the bishop. There is the stock of two ploughs and two harrows, with certain acres which are sown, a grange, and an enclosed court or farm-yard. The pasture with the sheep remain in the bishop's hand, but Adam may have one hundred sheep there as long as he holds the farm. At Ketton the demesne was furnished with a grange, a byre, and other buildings standing in a court which was enclosed by a hedge and ditch—an early form of moated grange. At Gateshead mills, fisheries, and a bakehouse were attached to the demesne; at Stockton there was a ferry.

Although the home-farm was cultivated by the servile tenants, the lord had his own ploughs, in terms of which the measure of the land was expressed—it was a demesne of so and so many ploughs. The land was either in the bishop's hand, when we may suppose that it was cultivated under the supervision of his own officers, or else it was put to farm, in which case the 'firmarius' would have the whole responsibility, getting what he could out of the land and turning over to the bishop a stipulated quantity of money and produce. Sometimes, as at Ryton, the village community acted in this capacity and took over the land and stock, agreeing to make a fixed annual return. The bishop made over to them the mill, the stock of one plough and one harrow, and 20 chalders of oats and the fishery, and they were to render 14*l.* in return. At Great Haughton, Benedict of Haughton held the demesne at farm by charter; certain acres were sown for him, and he rendered 20 marks. At Heighington, 'the demesne is at farm with the stock of three ploughs and a half and three harrows and a half, and it renders for two ploughs 16 chalders of wheat, 16 chalders of oats, and 8 chalders of barley, and for one plough and a half 5*l.*' Sometimes the whole vill, including the demesne, was put to farm, as at Winlaton, Barlow, and Wivestone.

In many cases, as we have seen, several villis were connected with a single demesne, and this occasionally causes some perplexity. Thus at first sight it would seem as though Merrington, Hutton, and Butterwick were without demesne. But a more attentive reading discloses the fact that these villis are connected with Newbottle, Shotton, and Sedgfield respectively; in the first case by the existence of a pinder common to the two villis, and in the second and third by the obligation to plough at Shotton and Sedgfield.

<sup>1</sup> See on this subject, Adley, *op. cit.*, i. ch. i; Vinogradoff, *op. cit.*, 313–315.



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The stock of the home-farm consisted of tools, furnishings, and buildings. The ploughs, as we shall presently see, were home-made, and were not always the heavy affairs that required the full team of eight oxen to draw them. There is evidence, indeed, indicating that a light plough drawn by two horses, or even by one, was sometimes made use of. The farmers of Morton were obliged for every 2 bovates to harrow eight days with one horse, and 'for every plough of the vill they plough 1 acre at Houghton.' At Wardon, a vill of the same group, the farmers harrowed with a horse, but they had ploughs as well, for we read that the pinder of Houghton had thraves of the ploughs of that vill and of Wardon and Morton. There is no co-aration; clearly this work must have been done with the horses used in harrowing.<sup>1</sup>

The farm buildings, consisting of the grange, the byre, and perhaps the hall and other buildings, were enclosed by a hedge and ditch, and known collectively as the court (*curia*). In picturing their general appearance we ought to keep in mind the relation of the word '*curia*' to the modern French '*basse-cour*' rather than the current English court in the sense of a country house. The grange or farmhouse was technically the place where the crop was stored.<sup>2</sup> The '*aula*' or hall was the principal structure of the group, and may be regarded either as a dwelling-place or as the building in which the meetings of the manorial court were held, although the two functions are not of course incompatible. Still the word '*hall*' seems generally to have had the sense of a building which the lord provided to shelter the halmote, which had previously been held in the open air.<sup>3</sup> The word, however, presents several curious little difficulties. In Domesday Book it appears to be used as the equivalent of '*curia*,' and occasionally even of '*manerium*,' and Professor Maitland has argued that in a general way we should understand it to mean the house which was the focus or representative of the tax-paying capacity of the whole agrarian complex.<sup>4</sup> In Boldon Book the '*aula*' is clearly a material fact; it is the structure itself that confronts us, and here is a plain distinction between the '*aula*' and the '*curia*.' The villeins of Bedlington must enclose the court and roof the hall. At Haughton there is a grange, a byre, and a '*curia clausa*,' and at Ketton there are 'a grange and a byre and other houses which are in the court which is enclosed with a ditch and a hedge.' Then the bishop's temporary hunting lodge or encampment, with its various chambers and conveniences, which the villeins had to construct for the '*magna caza*' is described in the Aucklandshire entry as the hall, but in the Stanhope entry is called the bishop's lodging. There is a record again of certain lands which lay in the open-fields of Darlington '*contra aulam*,' and the same entry mentions the bishop's houses and court at Darlington. There is, however, one case where the word '*hall*' might conceivably be understood in the sense of manor or local community. The villeins of Heighington render 64 chalders of oat-malt '*ad mensuram aulæ de Heighingtona*.' This occurs again at Killerby, which was a member of the manor of Heighington. This does not, however, affect our main position, for the hall as the adminis-

<sup>1</sup> On the use of the light plough for individual villein services on the demesne and the introduction of co-aration into France and Normandy, see Kovalevski's instructive volume, *Die oekonomische Entwicklung Europas*, ii. 115-117, 370-385.

<sup>2</sup> Garnier, *Landed Interest*, i. ch. 14. Cf. Vinogradoff, *Growth of the Manor*, 224-225.

<sup>3</sup> Vinogradoff, *Villainage in Eng.*, 367-368.

<sup>4</sup> Maitland, *Dom. Bk. and Beyond*, 109-110, 125, where the passages from *Dom. Bk.* are cited.



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trative centre of the agricultural group would naturally be the place where produce was weighed and measured and the standard measures of the district were kept. The byre or cattle stable (*bovaria*, *vaccaria*) calls for no special comment. An enclosed copse, plantation, or perhaps an orchard (*virgultum*) frequently formed part of the demesne stock. The villeins of Heighington enclose the bishop's copse, and at Durham there was a toft 'juxta virgultum Domini Episcopi.'

The mill was, of course, an indispensable factor in the life of an agricultural community. The mills on the bishop's lands were provided by him and were a not inconsiderable source of revenue.<sup>1</sup> They were generally farmed at a fixed sum, and this seems to have been the regular plan even in Bishop Pudsey's time, for it was particularly noted that the mill at Tursdale was in the bishop's hand 'nondum ad firmam positum.' The farm was commonly paid in money, but the mill of Carlton rendered twenty measures of wheat according to the measure of Jarrow. At Norton a little holding consisting of 8 acres and a meadow was attached to the mills, which as usual were at farm. The mills were generally moved by means of a water-wheel, and it was the business of the villeins to construct and repair the mill-dam and to cart mill-stones as they might be required.<sup>2</sup> The obligation to make use of the lord's mill and to pay a fee for that accommodation, technically known as 'secta molendini,' in English suit and grist, was repugnant to most tenants, who were inclined to make use of unauthorized handmills.<sup>3</sup> Individuals and communities were sometimes allowed their own mills as a special privilege. Thus the burgesses of Wearmouth were allowed to have handmills, a privilege imitated from the Newcastle charter upon which theirs was modelled.<sup>4</sup> There is a case also of a private mill worked by horses at Oxenhall, where the tenant and his land are expressly freed from multure and services at the bishop's mills.

The common bakehouse appears to have existed only in the towns. It is noted at Durham, Gateshead, and Darlington. In other parts of England it was an ordinary manorial banalité, which the tenants were bound to use, paying a fee known as 'fornagium.'<sup>5</sup>

The fisheries were another valuable part of the stock of the demesne. These were either a stew or fish-pond as at Bedlington, where the villeins 'parant piscariam,' or else the exclusive right to take fish in streams and rivers.<sup>6</sup> The word appears to be more generally used in this second sense. Thus the bishop's fishery at Whickham yielded 3*l.*, the prior of Brinkburn had another there of the bishop's alms, and the men of Ryton another still which they farmed of the bishop. These were on the Tyne and the fish were taken by means of a yare, a kind of dam with a trap into which the salmon were directed as they came up the river.<sup>7</sup> The bishop seems also to

<sup>1</sup> At the close of the thirteenth century the farm of the mills of the bishopric yielded 138*l.* 12*s.* 4*d.* Receipt Roll, 1307, in *Boldon Bk.* (Surtees Soc.), App. pp. xxvii-xxviii.

<sup>2</sup> e.g. Thickley and Stanhope.

<sup>3</sup> See Ashley, *op. cit.* i. 34, 62, and the literature there cited.

<sup>4</sup> See Bishop Pudsey's charter to Wearmouth in *Boldon Bk.* (Surtees Soc.), App. p. xlii.

<sup>5</sup> Ashley, *op. cit.* i. 62, where the case of a survival of this as late as 1714 is quoted.

<sup>6</sup> The right to have whales, sturgeons, and other royal fish belonged exclusively to the bishop in his capacity of 'comes palatinus.' See Lapsley, *op. cit.* 58, 63, 317, 319-320.

<sup>7</sup> See Receipt Roll, 1307, in *Boldon Book* (Surtees Soc.), App. p. xxxix, and Canon Greenwell's note in *ibid.* gloss. s. v. Yare. The yares were no doubt the same as the weirs and kiddells which the Great Charter directed to be thrown down throughout England. Cf. the basket weirs on the Severn described in Seebohm, *Village Community*, 151-153, and the accompanying sketch.

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have had the right of fishing the streams of the forest, for he conceded this to the burgesses of Gateshead at the rate of *1d.* 'pro homine piscante.'<sup>1</sup>

The beasts on the farm were of course part of the stock. They were mostly horned cattle and sheep. The former were kept chiefly by the villeins as we may infer from the render of a milch-cow which accompanied the payment of cornage, and the frequent reference to carting with oxen. A good example is afforded by the vill of Little Usworth which 'quadrigat vinum cum viii bobus.' But the bishop had cattle of his own as appears from the Wolsingham entry, where it is said that the villeins cart the corn of the bishop's demesne 'cum auxilio boum Episcopi.' The use of horses in agricultural work was unusual, but as we have seen not unknown. Still, those drengs and other tenants part of whose duty consisted in going on the bishop's errands can scarcely have gone afoot. They must have had horses for their journeyings. A number of horses were also kept for hunting. These, like the hunting dogs (*leporarii*),<sup>2</sup> were kept and probably trained for the bishop by his forest tenants. Thus at Great Usworth 'drengus pascit canem et equum et est in magna caza cum ii leporariis,' and like entries occur frequently. Swine were commonly kept and driven to pasture in the forests of the bishopric. For this privilege the villeins paid a due known as pannage, but the knights and barons pastured their swine without payment.<sup>3</sup> The keeping of sheep seems to have been confined to the bishop, who is credited with rather a large number of them. When the demesne was farmed there was generally a fixed return on the flock proportionate to its size stated in round numbers. At Ryhope and Burdon there were three hundred sheep for which the farmer rendered 6 marks, and at Shotton two hundred for which 4 marks were exacted. These pleasant round numbers and the neat rate of 2 marks per 100 warn us that we have to do with an estimate rather than an exact tale. Finally, we may mention the hens and eggs which formed so large a part of the peasant's dues, and which as we know from the later account-rolls were generally sold.<sup>4</sup> It is surprising however that no one seems to have kept pigeons; the 'columbarium,' throughout the Middle Ages so general and so profitable a source at once of revenue and exasperation, does not occur in Boldon Book.

From the live stock of the farm we turn naturally to consider its produce, and are struck at the outset with the fact that the staple crop was oats. A learned writer on agricultural history has said that 'over the greater part of England, over all, indeed, which has come under my inquiry, even as far north as the county of Durham, the staple produce of agriculture, and by implication the staple food of the people, was wheat, though oats are

<sup>1</sup> See Bishop Pudsey's charter to Gateshead in *Boldon Book* (Surtees Soc.), App. p. xl.

<sup>2</sup> Literally greyhounds, but here, as Canon Greenwell suggests, the old English staghound is probably meant. Cf. *Boldon Book* (Surtees Soc.), gloss. s.v. Caza.

<sup>3</sup> See Bishop Pudsey's charter to Walter of Caen and Robert son of Roger, 'Et si porcos habebunt in foresta et pastura ibi fuerit, liberi et quieti erunt de pannagio porcorum de propriis domibus suis, sicut alii Barones et milites nostri quieti sunt et esse debent.' *Boldon Book* (Surtees Soc.), App. No. vii. Then in his charter to Alan de Chilton, Pudsey stipulates, 'et homines sui dabunt pannagium de porcis suis, sicut alii homines militum nostrorum, qui in foresta manent, ipse autem de propriis porcis suis quietus erit.' Ibid. No. viii. The villeins of Lanchester, 'adducunt porcos de pannagio,' i.e. the pigs that were rendered to the bishop as payment. Cf. Turner, *Forest Pleas* (Selden Soc.), pp. 59-60; Tait, *Mediæval Manchester*, p. 104.

<sup>4</sup> In 1211, 733 hens were sold for 114*s.* between June and November, and in one year the hens and eggs 'customarily sold' yielded 9*l.* 18*s.* 10*d.* Pipe R. 13 John in *Boldon Book* (Surtees Soc.), App. p. xiii.



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also consumed as the food of man in those northern regions.’<sup>1</sup> As far as concerns Durham in the twelfth century the generalization is contrary to the evidence at our disposal in Boldon Book.<sup>2</sup> Let us consider the produce of two or three typical villis. At Boldon the only grain which the villeins rendered their lord was oats, and the farmers of the demesne there rendered wheat, barley and oats in equal quantities. This does not of course prove that the villeins raised nothing but oats, but it does prove that the produce of oats was greater than that of any other grain. The conditions are the same at Sedgefield, Stockton, and a number of other villis. At Wolsingham the villeins rendered no grain at all, but the demesne farmer was answerable for 16 chalders of wheat, 16 of barley, and 70 of oats. The inference from these figures is obvious. Then, again, although barley is the grain commonly used for malting, and although barley was grown and malted in the north, oats were also used for that purpose in Durham, and the two terms ‘brasium’ and ‘avermalt’ are contrasted in Boldon Book.<sup>3</sup> Thus the villeins of Heighington rendered 10 chalders of malt and 63 chalders of avermalt, and those of Killerby 10½ chalders of malt and 66 of avermalt. In 1211, when the temporalities were in the king’s hands, the keeper accounted for 2065½ quarters of wheat and 5236 quarters and 3 bushels of oats, and in that same year 1725 quarters of oats were exported to Ireland.<sup>4</sup> There can be little doubt then that in Durham oats formed the staple product of the land, although wheat, barley, and beans<sup>5</sup> were also grown. The occurrence of a gardener as a village officer at Wolsingham and the obligation of transporting fruit incumbent on the villeins of Darlington<sup>6</sup> indicates that the more elaborate forms of cultivation were not unknown, but they must have been rare, as these are isolated notices.

The usual local production of beer and bread is attested by the renders of malt and by the mills and bakehouses already noticed, as well as by the profits of the toll of beer recorded at Norton and other places, and the tun of that fluid which was provided for the refreshment of the villeins of Aucklandshire when they were constructing the bishop’s hunting-camp. A render of meal (farina) was also not uncommon. There must also have been a pretty considerable production of timber and firewood. The second appears from the very common duty of the villeins to render ‘wodlades,’ that is to convey loads of fuel from one place to another. Good examples of this may be seen in the Boldon and Wolsingham entries. Then as late as the fifteenth century the bishop’s forests still produced fuel enough for the smelting of a good deal of iron.<sup>7</sup> The use of timber for building appears frequently in Bishop Pudsey’s charters. Ralf Basset, to whom the bishop granted Pencher, was permitted ‘meremeum in foresta nostra ad molendinum illud faciendum et reficiendum per visum forestariorum nostrorum, ibi capiendū ubi ad molendina nostra

<sup>1</sup> Thorold Rogers, *Six Centuries of Work and Wages* (New York, 1884), p. 59.

<sup>2</sup> On the use of oats in England, despite Professor Rogers ‘conviction that the populace lived practically on wheat,’ see Cunningham, *Industry and Commerce*, i. 304 n., 503.

<sup>3</sup> One may be permitted some reasonable doubt as to the quality of the beer made from this malt. When Robert de L’Isle was bishop he visited Norham, ‘et dominus de Scremerston sibi servisiā misisset, Episcopus cum non esset assuetus servisiā a magno tempore bibere, ob reverentiam tamen mittentis et famam cervisiæ gustavit; et non sustinens statim a mensa surgens, evomit,’ Graystones, cap. xvi. in *Scriptores Tres*. (Surtees Soc.), 57.

<sup>4</sup> Pp. R. 13 John, in *Boldon Book* (Surtees Soc.), App. p. xix.

<sup>5</sup> This is so in the best text of Boldon Book.

<sup>7</sup> Lappin, in *Lough Hut. Rev.*, xiv. 509-529.

<sup>6</sup> Ibid.



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facienda capitur.<sup>1</sup> Similar privileges were accorded by the same bishop to Simon the Chamberlain for building and repairing his houses and those of his tenants<sup>2</sup> and to Alan de Chilton 'ad edificandum et comburendum.'<sup>3</sup> There must even have been some exchange of this commodity within the bishopric, as appears from an instructive passage in Bishop Pudsey's charter to the Gateshead burgesses, 'Et licebit cuilibet burgensi dare de lignis suis cuicumque voluerit manentium citra Tynam sine pravo ingenio, sed nemini vendere sine licentia forestarii.'<sup>4</sup>

Boldon Book affords us some light on the state of industry in the bishopric at this time. It is scarcely necessary to remind the reader that the mediæval manorial community was as far as possible self-sufficing, producing and consuming what it needed, so that the artisan had no reason for producing more than was needed by the community of which he formed part. He was also in most cases an unfree person, the labour of whose hands would in all strictness belong to his lord. He could not therefore support himself solely by industry, but was obliged to fall back on agriculture. As in the case of the administrative officers of the manor the artisan's services were rewarded with a small allotment of land which he was permitted to hold free of labour for the lord.

The most important industry in an agricultural community was no doubt that of the smith who made and repaired the iron-work of the ploughs, harrows, and other instruments of husbandry. In most parts of England except Sussex and Gloucester the iron for this purpose had to be purchased at some fair or market and supplied to the smith by the manorial bailiff,<sup>5</sup> but in Durham iron was produced and seems to have answered local needs;<sup>6</sup> later indeed we have evidence that the bishop was importing a finer quality of iron from Spain.<sup>7</sup> At Wearmouth and Tunstall the smith held 12 acres 'for the iron-work of the ploughs and for the coal which he finds,' and at Sedgefield the smith had 1 bovaté 'for the iron-work of the ploughs which he makes, and he finds the coals.' But at Escomb 'a certain collier holds 1 toft and 1 croft and 4 acres and finds coals for the iron-work of the ploughs of Coundon.' In the charter by which Bishop Pudsey conveyed certain lands to the Hospital of St. Giles it is provided that the establishment is to have 'mineram ferri infra Rokehope ad carucas et alias necessitates faciendas.'<sup>8</sup>

Next to the smith in importance would come the carpenter, who contributed the framework of the ploughs and harrows, and fitted the iron parts to them. At Sedgefield the carpenter has 12 acres for making and repairing the ploughs and harrows, and at Wearmouth the carpenter, 'qui senex est,' has 12 acres for his lifetime for making the ploughs and harrows. Sometimes the holding was smaller than this, as at Houghton, where the carpenter had 1 toft and 4 acres, or at Wolsingham, where the son of Humphrey had 6 acres and made ploughs.

The practice of other small but necessary industries is attested by the notice at North Auckland of a cobbler who held 1 toft and croft and 4 acres and owed certain renders and services, and at Wolsingham of three turners, who for their holding of 17 acres were required to render 3,100 trenchers beside doing boon-work and helping to get in the hay. There must of

<sup>1</sup> *Boldon Book* (Surtees Soc.), App. No. v.

<sup>2</sup> *Ibid.*, No. vii.

<sup>3</sup> *Ibid.*, No. viii.

<sup>4</sup> *Ibid.*, No. iii.

<sup>5</sup> Ashley, *op. cit.*, i. 35-36.

<sup>6</sup> Lapsley, in *Engl. Hist. Rev.*, xiv. 509-529.

<sup>7</sup> Lapsley, in *ibid.*; *Co. Pal. of Dur.*, 284 n. 5, and the literature there cited.

<sup>8</sup> *Boldon Book* (Surtees Soc.), App. No. x.

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course have been a great many small industries which were not rewarded by a grant of land, and do not therefore figure in Boldon Book. An instance of this would be such woman's work as spinning, weaving, and the making of garments, which was no doubt as necessary at Durham as elsewhere.

Hitherto we have been considering village industries, but it is convenient at this point to turn our attention for the moment from the vill to the larger community, and examine the evidence afforded by Boldon Book with regard to the state of industry throughout the bishopric. Architecture, chiefly, though not exclusively, ecclesiastical, is the most noticeable achievement of the twelfth century in this department. Bishop Pudsey was a mighty builder, and has left a record of his activity that is not confined to the pages of the chroniclers, although they are by no means silent. We hear of his chief architect, a certain Richard called 'Ingeniator,' a person of wealth and consequence, 'cunctis regionis hujus incolis arte et nomine notissimus,'<sup>1</sup> who we find in the charters buying and selling land in Durham and the neighbourhood.<sup>2</sup> We hear also of other persons connected with these activities, whom we gather were the master masons or builders. At South Sherburn Christian 'Cementarius' holds 40 acres which the bishop gave him in the moor, and 2 bovates which used to belong to Arkill, and is quit of the rent the land owes so long as he is in the bishop's service. We find Christian testing one of the bishop's charters, and Canon Greenwell has discovered his grave-stone in Pitlington churchyard and printed the epitaph.<sup>3</sup> At Stanhope, Lambert, a marble worker (marmorarius), holds 30 acres free of rent while he is in the bishop's service, and, as it is known that Pudsey made use of a local marble for the Galilee chapel, it has been reasonably conjectured that this man was employed to work the quarries.<sup>4</sup>

A passage in Boldon Book leads us directly to the consideration of another important industry. We are told that the mint at Durham used to render 10 marks, but that this had been reduced by the mint which Henry II. set up at Newcastle, and that the king had at length done away with the older establishment altogether. The existence of a mint at Durham is attested from the time of William the Conqueror.<sup>5</sup> Coins struck there in the reigns of that king and of Henry II. have been preserved.<sup>6</sup> These, however, are merely royal coins which chance to have been struck at Durham rather than elsewhere, for at this period local mints were of common occurrence, and several of them, such as those of Winchester, Canterbury, and Durham, lived on into the later Middle Ages.<sup>7</sup> At Durham, however, the mint had a two-fold character, issuing episcopal as well as royal coins. The origin of this institution is very obscure. It was not a chartered mint like that which the abbot of Reading maintained by direct royal grant,<sup>8</sup> but seems to have been first employed for purely local purposes during the anarchy in Stephen's reign by Bishop Geoffrey Rufus who supported Stephen and who may have

<sup>1</sup> Reginaldi Dunelmensis *Libellus de Admirandis*, etc. (Surtees Soc., 1835), chs. 47, 54.

<sup>2</sup> *Feod.*, 140-141 n., 198 n., cf. *Boldon Bk.* (Surtees Soc.), 2.

<sup>3</sup> *Feod.*, 133 n., *Boldon Bk.* (Surtees Soc.), 10.

<sup>4</sup> See Canon Greenwell's note in *Boldon Bk.*, 10.

<sup>5</sup> This paragraph is taken from my work on the County Palatine of Durham, pp. 278-282; for convenience sake I reproduce the references here. The mint must have been established at Newcastle some time before the Boldon survey, as its presence is attested in the *Pipe Roll*, 22 Hen. II. (*Pipe Roll Soc.*), 1904, 137.

<sup>6</sup> Rushing, *Annals of Coinage of Great Britain*, ii. 164.

<sup>7</sup> Ashley, *op. cit.*, i. 167-169; Leake, *Historical Account of English Money*, 65-66, 71, 81, 100.

<sup>8</sup> Leake, *op. cit.*, 91-92.



profited by the royal favour to issue an episcopal coinage.<sup>1</sup> It is known that the right of coinage was much coveted and freely usurped at this period, and that both the king and the empress countenanced what they could not or did not care to prevent.<sup>2</sup> The privilege seems temporarily to have disappeared during the general resumption of royal rights in 1154,<sup>3</sup> but it must have been revived soon afterward only to be again suppressed in the fashion recorded in Boldon Book. Richard I. revived the privilege of an episcopal mint in favour of Bishop Philip of Poitou,<sup>4</sup> and during the vacancy preceding that bishop's accession there was a profitable 'cambium' or exchange and also in all probability a certain amount of coinage at Durham.<sup>5</sup> During the vacancy in 1213 the keeper of the temporalities accounted for 4*l.* 12½*d.* 'of the profit of exchange of one die.'<sup>6</sup> In 1253 there seems to have been some question of the bishop's title to the privilege of coinage, but after an inquest had been taken and the dies and coins from old time used and made in Durham had been produced, the bishop's right was admitted and embodied in a charter,<sup>7</sup> and the right was recognized in the Quo Warranto proceedings of 1293.<sup>8</sup>

The very presence of a mint at Durham points to the need of a medium of exchange. Not even the most favoured community could hope to be quite self-sufficing, and we find that a good many commodities had to be imported into the bishopric. Those that occur most frequently in the documents are wine, mill-stones, salt, and herrings. Foreign wines, German as well as French, were largely imported into England during the Middle Ages, and their use was by no means restricted to the upper classes.<sup>9</sup> The frequent recurrence in Boldon Book of the obligation of carting wine indicates that a large amount of it must have been imported. The duty of carting a tun of wine appears to have been a normal incident of drengage tenure. At Herrington a tenant who held two parts of a drengage carted two parts of a tun of wine, and at Hutton a full dreng carted a whole tun to Durham. Sometimes, as at West Auckland, it was no more than the obligation to find four oxen for the purpose. Sometimes the duty was incumbent on a whole vill or a pair of vills, as at Ryton and Crawcrook, or at Iveston, where the villeins had to provide eight oxen.

The indispensable mill-stones were generally fetched from the neighbourhood of Paris, where the best quality was produced, and the task of conveying them by land when they arrived in England fell to the lord's tenants.<sup>10</sup> Boldon Book affords us abundant evidence of this custom. The villeins of Bedlingtonshire had to cart 'petras molendini.' At Stanhope the obligation is incumbent on the farmers as well, and at Hutton it is a dreng who must meet it. It seems that in the bishopric mill-stones were sometimes a home product. The villeins of Great Usworth convey mill-stones to Durham and they of Butterwick to Sedgefield, and in 1211 mill-stones were sent from Durham to Ireland.<sup>11</sup>

Salt was even more indispensable and was needed in larger quantities than

<sup>1</sup> Noble, *Two Dissertations on the Mint of the Episcopal-Palatine of Durham*, i. 5 ff.

<sup>2</sup> Stubbs, *Constitutional Hist.*, i. 371.

<sup>3</sup> Noble, loc. cit.

<sup>4</sup> Roger of Hoveden, *Chronica* (Rolls Ser.), iv. 13.

<sup>5</sup> Pipe R. 8 Ric. I. in *Boldon Bk.* (Surtees Soc.), App. p. xii.

<sup>6</sup> Ibid. 14 John, ibid. p. xx; cf. Ruding, *op. cit.*, i. 179.

<sup>7</sup> Pat. 11 Hen. VI., pt. ii. m. 22; this is an inspeimus of a charter of 37 Hen. III.

<sup>8</sup> *Plac. de Quo War.* (Rec. Com.), 604.

<sup>9</sup> Cunningham, *op. cit.*, i. 182, 184; Ashley, *op. cit.*, i. 191.

<sup>10</sup> Rogers, *Six Centuries*, etc., 112 ff.

<sup>11</sup> Pipe R. 13 John, in *Boldon Bk.* (Surtees Soc.), App. p. xviii.

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it is now, at a time when for many months in the year the mass of the people had to eat salted meat or else go without meat at all, and when all the world was obliged to eat salt fish for six weeks in the spring. In England salt was produced only by solar evaporation, but a better quality could be imported from the south-west coast of France.<sup>1</sup> Although the English product was generally restricted to the southern and western counties,<sup>2</sup> the fact that in 1211 salt was sent from Durham to Ireland along with such unmistakably local products as salmon and iron<sup>3</sup> would indicate that it must have been made in the north as well. Still salt had to be imported into the bishopric, for in Bishop Pudsey's charter to Wearmouth it is provided that all merchandise brought by sea must be landed, except salt and herrings, which may be sold on board.<sup>4</sup> Three times a year the bishop's tenants at Darlington were obliged to cart wine, salt, and herrings.

The origin and development of the English municipalities is one of the most intricate and troublesome questions with which scholars have had to deal. It is necessary to determine first the elements of the institutions and their environment, and then to ascertain what forces were acting on those elements to produce the changes and combinations which followed. This study is peculiarly one that requires such a comparative method as the conditions of the present work forbid. It is impossible to isolate the boroughs of the bishopric and treat them as local phenomena. Again, in dealing with the question of origins we must turn to the period before the Conquest, and study it either in the light of the Anglo-Saxon documents or by the reflected illumination of Domesday Book. But for Durham we have neither Anglo-Saxon documents nor Domesday Book.<sup>5</sup> Boldon Book, on the other hand, notifies us of the existence of five boroughs, and we are confronted with the problem of accounting for their origin and trying to form some idea of their condition in the year 1183. Such a study under such conditions can only produce results that are merely provisional, or at best incomplete. It must none the less be undertaken, and we shall naturally begin with the city of Durham, the centre of the civil as well as of the ecclesiastical administration of the county.

Boldon Book affords us but little information with regard to Durham. The city,<sup>6</sup> we are told, is at farm, and renders 60 marks. But some further light is forthcoming from an unpromising quarter, namely, the charters in the feodary of the prior and convent. From this source we learn that the monks had a little borough in a suburb known as Elvet, and divided from Durham only by the course of the river Wear, which was bridged at that point. The land had been granted or restored to the convent by Bishop Ranulf,<sup>7</sup> and a borough community, an offshoot no doubt of the larger town, seems to have grown up there before the accession of Bishop Pudsey.<sup>8</sup> He rebuilt the bridge which

<sup>1</sup> Rogers, *op. cit.*, 95-97.

<sup>2</sup> Rogers, *op. cit.*, 95-97; Ashley, *op. cit.*, i. 37.

<sup>3</sup> Pipe R. '13 John, in *Boldon Bk.* (Surtees Soc.), App. p. xviii.

<sup>4</sup> *Boldon Bk.* (Surtees Soc.), App. No. iv.

<sup>5</sup> Lapsley, *County Palatine*, pp. 25-27, 329.

<sup>6</sup> Durham is distinguished from the other boroughs in Boldon Bk. by the use of the word 'civitas,' which was technically restricted to the seat of a bishop or a county town. Cf. Maitland, *Dom. Bk. and Beyond*, 183 n.

<sup>7</sup> *Feod.*, 191-192 nn.

<sup>8</sup> This appears from a fourteenth-century document of an historical nature compiled from much older materials; here is the passage: 'Et si quare vocatur Vetus Burgus, respondeatur quod sic dicitur ad duracionem burgi erecti in Elvethalge tempore Hugonis Episcopi, qui in cartis et aliis munimentis vocatur Novus Burgus, per Hugonem Episcopum constructum.' *Feod.* 194-195 n. This is corroborated by a passage from the *Historia Ecclesiastica* to the effect that in 1141 William Cumin and his followers 'partem quoque burgi quæ ad monachos pertinebat sibi tradiderunt.'—*System of Durham* (Rolls Ser.), i. 159.



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had fallen into disrepair, and erected the community into a borough. But when upon inquiry it appeared that the land belonged to the convent he restored it to them along with his new borough.<sup>1</sup>

We must think of Bishop Pudsey's city then as a prosperous walled town, probably far less agricultural in its aspect than the other boroughs of the bishopric. Pudsey, as we have seen, paid great attention to the embellishment of his capital, adding to the cathedral, restoring the walls, bridges, and castle, and replacing many old buildings with new and better ones,<sup>2</sup> playing, in short, 'si licet parva componere magnis,' the rôle of a little Augustus in this northern Rome.

From the capital we may pass to that one of the episcopal boroughs about whose constitution we have the fullest information. This is Wearmouth, which later received the name of Sunderland, which it still bears. The two settlements are close together, but it is not clear how the name of the younger fastened itself upon and absorbed that of the elder.<sup>3</sup> Bishops-wearmouth, as it was called to distinguish it from the monk's vill of the same name on the northern bank of the river, formed part of the ancient patrimony of St. Cuthbert,<sup>4</sup> but Boldon Book clearly distinguishes between it and Sunderland. It is plain enough, however, how with that increase of commercial relations which marked the twelfth century, a sea-port village would naturally grow into a borough. Just as Durham had its castle and cathedral church, so Wearmouth had its situation at the mouth of a navigable river to serve as the focus for the concentration of an industrial and commercial population.

The charter by which Bishop Pudsey accorded to the burgesses of Wearmouth the constitution or customs of Newcastle must be regarded rather as the recognition of an existing borough than as the creation of a new one.<sup>5</sup> Spearman, the Durham antiquary, assigned the document to the year 1154.<sup>6</sup> But this is impossible, for it is witnessed by Philip the Sheriff, who did not assume that office until 1180.<sup>7</sup> As Boldon Book describes Wearmouth as a borough the charter must have been issued between 1180 and 1183.

The town of Gateshead, lying on the right bank of the Tyne just opposite Newcastle, must have been in its origin connected with that large settlement, and might even in a sense be regarded as its suburb. But even as late as 1080, when Bishop Walcher was murdered there, Gateshead was not yet a borough. Symeon and Florence in their accounts of the event describe Gateshead as a 'place,' and although they mention a church there is no other evidence of any concentration of population there. A century later the inhabitants obtained a charter<sup>8</sup> from Bishop Pudsey, which appears to convey an even smaller measure of privilege than that granted to Wearmouth.

<sup>1</sup> *Feod.*, 198 n.; Coldingham, cap. vii. in *Scriptores Tres.* (Surtees Soc.), p. 12.

<sup>2</sup> *Vid. sup.* p. 304; cf. Coldingham, *loc. cit.*; Symeon of Durham (Rolls Ser.), i., 168.

<sup>3</sup> See Hutchinson, *Hist. of Durham*, ii. 516; Surtees, *ibid.*, i. 224-225.

<sup>4</sup> Symeon of Durham (Rolls Ser.), i. 69-70; *Feod.*, pref., xvii.

<sup>5</sup> The text is given in Surtees, *Hist. of Durham*, i. 297-298, and *Boldon Book* (Surtees Soc.), App. No. iv.

<sup>6</sup> J. Spearman, *Enquiry into the Ancient and Present State of the County Palatine of Durham*, Edinburgh, 1729; cited in, Summers, *Hist. of Sunderland*, i. 215.

<sup>7</sup> *Vid. inf.*, p. 313, n. 2.

<sup>8</sup> The text is printed in *Boldon Book*, App. No. iii. Hutchinson, *Hist. of Durham*, ii. 454, assigns the document to the year 1164. He seems to have obtained this date either from an endorsement on the original, or, as is far more likely, from some of the transcripts of which he made use. In any case it appears to be either traditional or else purely arbitrary. The charter itself is undated and unwitnessed, and the text affords no means of dating it by internal evidence.

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It is, in fact, rather a group of special exemptions and liberties than a proper municipal charter.<sup>1</sup>

The case of Darlington presents great difficulty owing to the want of documentary evidence. We know from Boldon Book that the place was a borough in 1183 and that the industry of dyeing cloth was carried on there, but we have no charter or other evidence throwing light on its internal history. It has been described as a borough by prescription,<sup>2</sup> which as far as the question of origins is concerned, is after all a 'petitio principii.' Its situation in regard to the great northern road would in a large measure account for the concentration of industrial population there, for it lies on the natural route from Watling Street to Hartlepool and the mouth of the Tees.<sup>3</sup> As early as 1083 it was already a place of consequence, for Bishop William I. chose the church of Darlington which he erected into a collegiate as a retreat for the canons whom he had removed from Durham to make room for the monks.<sup>4</sup> This church Bishop Pudsey rebuilt and he is said to have constructed himself a house in the town, but although this is quite likely, it does not seem to be well attested.<sup>5</sup>

The case of Norham is relatively simple. It was a community that grew up about a border castle and in the fullness of time received from the bishop a grant of the Newcastle customs. The castle of Norham was built by Bishop Ranulf Flambard in 1121. In the chronicler's fine phrase, 'condidit castellum in excelso præruptæ rupis super Twedam flumen, ut inde latronum incursus inhiheret et Scottorum irruptiones.'<sup>6</sup> Bishop Pudsey rebuilt this castle, increasing and extending its fortifications.<sup>7</sup> In a brief charter this same bishop granted to his burgesses of Norham all liberties and customs as freely as any borough north of Tees, and as Newcastle had them. He further accorded them one or two special privileges and a confirmation of the land and pasture which Bishop Ranulf had granted them.<sup>8</sup> The charter is neither dated nor witnessed, but it must have been earlier than Boldon Book, which records that the borough of Norham with its toll, stallage and forfeitures is worth 25 marks.

This completes the list of the boroughs existing in 1183, for Chester, Stockton, and Auckland are of later creation, and although Hartlepool was added to the bishopric by purchase towards the close of Pudsey's long pontificate, it formed no part of his possessions at the time of the Boldon survey.<sup>9</sup>

Thus in 1183 we have found five municipalities having a common character in their relation to the local sovereign, the bishop, and to the mother town of Newcastle from which they derived the model of their constitution. We have been able to mark the external conditions which determined the growth of these communities. The castle and church at

<sup>1</sup> For further details in regard to Gateshead, cf. Brand, *Newcastle-on-Tyne*, i. 461 ff.

<sup>2</sup> Hutchinson, *Hist. of Durham*, iii. 184; Surtees, *Hist. of Durham*, iii. 357.

<sup>3</sup> Cf. H. MacLauchlan, *Memoir written during a Survey of the Watling Street*, London, 1852; the map of the survey, 1857, and the Ordnance Survey maps.

<sup>4</sup> *Symeon of Durham* (Rolls Ser.), i. 123 n.

<sup>5</sup> Coldingham, cap. vii. ix., in *Scriptores Tres.* (Surtees Soc.), pp. 12, 14; Leland, *Collectanea*, v. ii. 333; Hutchinson, *Durham*, i. 181-182.

<sup>6</sup> *Symeon of Durham* (Rolls Ser.), i. 140. The date comes from Raine, *North Durham*, 257.

<sup>7</sup> *Ibid.* i. 168; Coldingham, cap. viii., in *Scriptores Tres.*, p. 12.

<sup>8</sup> The text is in Hutchinson, *Hist. of Durham*, iii. 395, and also in Raine, *North Durham*, 257.

<sup>9</sup> *Vid. sup.*, p. 267.



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Durham, the castle of Norham, the sea-port at Wearmouth, the high-road at Darlington, and the neighbourhood of a great town at Gateshead which we have described as practically a suburb of Newcastle.

The question of the introduction of Continental feudalism into England is at best a difficult and thorny one. Even when we have Domesday Book to work from, much remains obscure and indeterminable. The question immediately at issue is one of form rather than of substance, since there is no doubt that many elements of feudalism existed in England before the Norman Conquest. But we must still ask ourselves how the system of jurisdiction and personal relations, and the mode of land tenure which we call feudal, fastened itself and its terminology upon English soil. Under the influence of Germanism and the evolutionary ideas of Freeman and his followers, it used confidently to be taught that the process was one of slow and natural growth, a gradual passage from one form to another and cognate one, until William Rufus, prompted by Ranulf Flambard, discovered that an insistence upon the logic of feudal forms could be made a source of revenue, and rigorously applied that logic throughout his kingdom. Recently there has been a reaction against this 'anti-cataclysmic' doctrine, which tended to reduce the dynamic action of the Conquest and the Conqueror's administration to insignificance, if not altogether to eliminate it. Mr. Round, in his brilliant essay on the Introduction of Knight Service into England,<sup>1</sup> has argued that the Conqueror stamped every allotment of land to a tenant-in-chief with the feudal form by burdening it at the time of the grant with a fixed amount of knight-service, regardless of what subinfeudation might or might not subsequently be made by the donor. On this hypothesis feudalism, or rather feudal forms, would have grown in England from the top downward, not from the bottom upward. With this introduction we turn to the question of the feudalization of the bishopric of Durham.

In the year 1071 the bishopric was in the king's hands and he proceeded, in co-operation no doubt with Lanfranc, to fill it up with a certain Walcher, a secular priest and a Lorrainer by birth.<sup>2</sup> To him the king confided the temporal government of the county of Northumberland on the deposition of earl Waltheof in 1077.<sup>3</sup> This duty the bishop discharged through the agency of his nephew Gilbert, like himself, of course, of foreign birth. But in the general administration of the bishopric and the county the bishop relied on a council, two members of which are closely connected with the events which we have to follow.<sup>4</sup> Both were Englishmen; the one, Leobwine, was the bishop's chaplain and had been his favourite until he was displaced by the

<sup>1</sup> Round, *Feudal England*, 225-317.

<sup>2</sup> The events that produced the vacancy are of importance as showing that the king's rights over Durham were practically those of a conqueror. Egelwine, the English bishop, was deposed the year after the harrying of the north, ostensibly for having deserted the see, but really for his share in the movement of the previous year; see *Symeon of Durham* (Rolls Ser.) i. 105; *Anglo-Saxon Chron.* (Rolls Ser.), i. 342-343, 346-347; cf. Hunt and Stephens, *Hist. of the Engl. Church*, ii. ch. 3.

<sup>3</sup> The events of Walcher's pontificate and his murder are recorded in *Florence of Worcester*, ii. 13-16; this account is mostly reproduced in *Symeon of Durham* (Rolls Ser.), i. 116-118 and ii. 208-211, but Symeon adds certain details of importance. The *Anglo-Saxon Chron.* dismisses the affair in a few words, i. 351, and William of Malmesbury, *Gest. Pont.*, does no more than condense Florence. With regard to Walcher's temporal position, it is important to notice in the first place that the king had built the castle of Durham (1072) 'to protect the bishop and his men against invasion,' and in the second place that Waltheof (who was executed for his supposed share in the Norwich Bride-Ale) was appointed as the 'legitimate' earl, and was on terms of great intimacy with the bishop. Cf. Ramsay, *Foundations of England*, ii. 95, 103-106, 118-119.

<sup>4</sup> Lapsley, *Co. Pal. of Dur.*, ch. iv.

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other, Liulf, a new-comer and a layman. This man was a rich thane who, to escape the fury of the Normans, had removed with all his household to Durham, attracted to the north no doubt by the kinship between his wife and earl Waltheof.<sup>1</sup> Leobwine, the displaced favourite, filled with jealousy, resorted to Gilbert, the bishop's nephew, and with him conspired for Liulf's destruction.<sup>2</sup> The two organized an attack on Liulf's house, where they butchered him and his whole family. It is likely that Gilbert's motive was hostility to the Northumbrian magnates who had been opposing him in his attempt to introduce Norman customs.<sup>3</sup> In any case the outrage seems to have given rise to a blood-feud which took on a political aspect owing to the position of the men involved, the bishop and the relatives of the murdered woman, members of the comital family of Northumberland. It should be noticed, too, that the affair was essentially part of the conflict of the two races. The bishop attempted to negotiate, but the affair was mismanaged; a tumult ensued, in which the bishop and the greater part of his following were murdered.<sup>4</sup>

Certain inferences of great importance for the subject in hand may be drawn from these events. William seems deliberately to have tried a policy of conciliation with the north country and to have insisted only on a superficial feudalization of this region. He restored the native earl and installed the bishop, who admitted the English to his household and council. On the other hand, he built a castle over which he retained the usual feudal rights, and he certainly regarded Walcher as a baron and tenant-in-chief.<sup>5</sup> The bishop's fee was probably charged with a certain amount of knight-service—ten is the number indicated in a later record.<sup>6</sup>

<sup>1</sup> The status and connexion of this Liulf are of importance. Florence calls him 'nobilis generosusque minister' (loc. cit.), and before the Conquest at least the word 'minister' would be the normal rendering of the vernacular 'thegn'; see the numerous passages collected in Guilihermoz, *Origine de la Noblesse*, 86–96. Liulf had married Alghitha, daughter of Aldred the earl, and aunt to Waltheof, and it must have been this connexion rather than the miraculous intervention of St. Cuthbert (supplied by Florence) that brought him to Durham in the troubled times. See, besides the particulars in Symeon, an important charter in which earl Waltheof presents Morkar, son of Liulf, along with a substantial endowment to the monks at Jarrow, in *Hist. Dunelm. Scrip. Tres.* (Surtees Soc.), App. pp. xviii.–xix. This charter, besides indicating the composition of the bishop's council, shows that Liulf must have come to Durham before, and probably considerably before, 1077, the date of Waltheof's death.

<sup>2</sup> The chroniclers place these events in the year 1080; the bishop was murdered on Thursday, May 14.

<sup>3</sup> Symeon makes the bishop responsible for the irritation in Northumberland, but his words suggest the interpretation put upon them in the text; 'suos licenter quæ voluissent et hostiliter nonnulla facientes, non refrænabat, indigenarum animos offendeat. . . . Milites quoque nimis insolenter se in populo habentes, multos sæpius violenter diripiebant, aliquos etiam ex majoribus natu interficiebant.' *Symeon of Durham*, i. 114. Liulf would naturally have been the representative of the native or reactionary party in the bishop's council, but the test clause of Earl Waltheof's charter cited above shows many other English names.

<sup>4</sup> Walcher perfectly understood the situation and said to Leobwine when he heard the news of the murder, 'You have destroyed yourself and me and all of my household who are of your race.' Still he made an attempt to compose the trouble, and a meeting was arranged at Gateshead on the border of the bishopric and Northumberland. The leaders of the Northumbrians were another Waltheof and Eadulf Rus, great-grandson of that Uchtred whom Knut had made earl of Northumberland. These men came to Gateshead with no confidence in the bishop, who had imprudently continued his intimacy with Leobwine and Gilbert after the murder, and the proceedings soon grew tumultuous. The bishop, attended by his clerics and more honourable knights, withdrew to the church and sent out Gilbert and a company of knights to continue the negotiation. But the Northumbrians fell upon them, sparing only 'duobus . . . Anglicis ministris propter consanguinitatem.' They then set fire to the church and killed the bishop and the rest of his following.

<sup>5</sup> This may be inferred from the account of William Rufus's dealings with Bishop William I. recorded in the pamphlet known as 'De Injusta Vexatione Willelmi Episcopi I.' in *Symeon of Durham*, i. 170–195. The whole question of the feudal status of the bishop was then (1087–1088) raised and argued, and the bishop's contention that he ought to be tried canonically, i.e. as a prelate, not as a tenant-in-chief, was disallowed. The chief representative of the king's view was Lanfranc, who had, with the Conqueror, reorganized the English Church; but hear his words, 'Nos non de episcopio sed de tuo te feodo judicamus,' and then he cited the feudal case of Odo of Bayeux, whom he and the Conqueror had judged earl of Kent. *Op. cit.*, p. 184.

<sup>6</sup> *Red Bk. of the Exch.* (R. L. Ser.), 416–418; see on this subject Round, *Feudal England*, 225 ff.



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Now it would have been quite feasible for Bishop Walcher to meet the requirements of this position of baron and tenant-in-chief, with its accompanying responsibility for military service, without making any serious changes in the internal arrangement of the district confided to his care. The Normans who accompanied him could have been provided for without any very great injustice, or displacement of the native English.<sup>1</sup> The process of subinfeudation, the imposition of a Norman superstratum over the English population, would thus have gone on gradually between the time of Walcher and that of Pudsey, and there is some evidence indicating that this is precisely what took place. In the first half of the twelfth century we find record of an episcopal baronage composed of great lords, whose dignity derives not from any relation to the king (of whom, indeed, they held at one remove), but rather from the extent of their lands and their tenure-in-chief of the bishop: Hilton, Bulmer, and Conyers—their names are all Norman.<sup>2</sup> Now one of these barons, and in respect to his holding perhaps the greatest of them, was the prior of Durham ‘pro tempore.’<sup>3</sup> Now the institution of a convent of monks under a prior took place in the Conqueror’s reign and with his approval, and this fact carries the creation of one feudal sub-tenant of the bishop back to the time of the first Norman king.<sup>4</sup>

Then, when in 1140 an intruder, hoping to make himself bishop, had actually got possession of the temporalities of the see, he bore himself, the chronicler reports, ‘non ut custos, sed sicut jam episcopus factus dans etiam terras et homagium omnium baronum . . . suscipiens.’<sup>5</sup> Here, then, we have the opinion of a contemporary as to what a new-made bishop should do; to grant lands and receive the homage of barons.

When in 1130 the temporalities of the see were in the hands of the king he took a ‘donum’ from the knights of the bishopric,<sup>6</sup> and when the institution of scutage came into general use the bishop paid for his knights like any other tenant-in-chief.<sup>7</sup>

This brings us to the period of Bishop Pudsey and of Boldon Book, with the conviction that at the time the survey was made the superficial feudalization of the bishopric was neither recent nor incomplete. How deeply the feudal institutions had penetrated, to what extent they had absorbed or done away with older tenures and relations, are questions to which we must now turn our attention.

If we interrogate Boldon Book we shall find that the bishop’s relations with his free tenants on his estate were only to a limited extent influenced by

<sup>1</sup> Some displacement there must, of course, have been. This is attested by the details of Walcher’s pontificate which have come before us, but the same evidence shows that there was no general confiscation or re-allotment, no ‘tabula rasa,’ and this is corroborated by our examination of the subject of drengage.

<sup>2</sup> This whole matter is worked out in Lapsley, *Co. Pal. of Durham*, 63–68; and cf. Tait, *Mediæval Manchester*, pp. 182–199.

<sup>3</sup> He was the tenant-in-chief of the bishop ‘tanquam dominus,’ not ‘tanquam patronus,’ so that the awkward canonical difficulty of an internal feudalization of the church was avoided. The distinction was not clearly stated until the middle of the thirteenth century, but it seems to have existed earlier, as we have seen. William and Lanfranc could apply the doctrine of capacities to a bishop; Lapsley, *op. cit.* 50 sqq.

<sup>4</sup> *Symeon of Durham* (Rolls Ser.), i. 119–124; cf. *Feod.*, pref. The charters, indeed, are spurious, but I see no reason to reject Symeon’s statement that the bishop obtained permission to make the change from the king and the pope.

<sup>5</sup> *Symeon of Durham* (Rolls Ser.), i. 146; cf. *ibid.* 150–151.

<sup>6</sup> Pipe R. 31 Hen. I. in *Boldon Bk.* (Surtees Soc.), App. p. ii.

<sup>7</sup> *Red Bk. of the Exch.* (Rolls Ser.), i. 15, 19, 26, 28; cf. Lapsley, *op. cit.* 285 sqq.

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feudal institutions. As we have seen, of the 141 vills enumerated, only six were being held of the bishop by military service or alms, five others were valued in feudal terms (fractional parts of a knight's fee), and fourteen others were possibly held in fee-farm—25 out of 141. In order to place this matter in its right relation, we must keep in mind what the compilers of Boldon Book had proposed to themselves. They were making a survey not for a king, but for a landlord; the document is domanial, not sovereign. Again, there was no question of general taxation, and whatever profitable rights the bishop enjoyed over the baronies of the bishopric are not noticed in the survey. To put a specific case, we look in vain in Boldon Book for the sort of information afforded by the returns in the *Testa de Nevill* and the *Red Book*. We have to deal, in short, with such a document as might have been produced had the king in his capacity of landlord commanded an extent of the crown lands. All this applies equally to Hatfield's Survey, with which we may check and supplement the testimony of Boldon Book. For although the later record shows some diversity in the disposition of its material (there is a definite grouping by wards), and, of course, enumerates the new settlements which sprang up between the twelfth and the fourteenth centuries, it includes the feudal tenants only as they are holders in, and not of, the episcopal manor.<sup>1</sup> This limitation of Boldon Book was observed by Canon Greenwell, who wrote, 'Perhaps the nature of the document would lead us to expect this omission [of the free tenants], for it is not so much an enumeration of all the holders of land under the see as of the services and customs due from the land; now, as free tenure rendered nothing of that kind, it does not come into consideration in such a record as Boldon Book professes to be.'<sup>2</sup> The case is not quite fully stated here, however, for we have seen that Boldon Book actually does enumerate a fair number of free tenants. In the case of any of those fifty-six vills of which the services and renders are not recorded,<sup>3</sup> feudal relations might have existed between the bishop and the tenant, although in point of fact such relations are to be found in less than half of them.

We may ask ourselves next what we might reasonably expect to find had a survey like Boldon Book been undertaken by one of the bishop's tenants-in-chief in the twelfth century. I cannot see any reason to suppose that such a document would have disclosed conditions more feudal than those which confront us in the episcopal estates. Indeed, we shall presently see evidence that the prior at least was following rather than leading the bishop in the sense of feudalization.

Let us begin with the general proposition that Bishop Pudsey introduced many changes on his estates with the deliberate policy of normalizing tenures in a feudal sense, of furthering, to put it in another way, the internal feudalization of the bishopric. We have first the evidence of the monkish chronicler Geoffrey de Coldingham, a contemporary of Bishop Pudsey. The bishop, says Geoffrey, did not observe the old laws in dealing either with his clergy or his barons, but treated them high-handedly, 'ut quorundam hæreditates et

<sup>1</sup> e.g., at Houghton, Robert Conyers, kt., and Richard de Burnynghill hold the vill of South Biddick, p. 153. A vill held in that way, as a member of a manor, is often described as itself a manor; thus, at Easington, Walter of Edderacres holds the manor of Edderacres, and Lady Isabella de Claxton the manor of Pespole; both these are enumerated in the list of free tenants, p. 127.

<sup>2</sup> *Boldon Bk.* (Surtees Soc.), pref. p. vii.

<sup>3</sup> *Vol.*, sup. pp. 271-2.



jura videretur in extraneos contulisse et novis institutionibus antiquas episcopatus leges et consuetudines penitus immutasse.<sup>1</sup> He took the greatest pains, moreover, to increase the wealth and possessions of his see, 'ut in brevi, priores redditus nova adaequarent sive transirent incrementa quae non tam suis quam succedentium sibi judicabat usibus profutura.'<sup>1</sup> He was making permanent changes—that is, there was no question of mere temporary extortions which would cease with his fall or death. Traces of this kind of change are discoverable in Boldon Book, not illegal or violent as it would seem, although it is not possible to measure either the reluctance on the one hand or the pressure on the other that may not lie hidden under the record of a voluntary transaction. Let us take account of a few cases of this nature. William Basset held the vill of Pencher partly of the bishop in chief and partly of Jordan Escolland who was one of the barons of the bishopric. But before the compilation of Boldon Book Ralf Basset, the father as it would seem of William, had been holding land of Jordan Escolland in Middleham. This tenement Bishop Pudsey wished to acquire, and accordingly he arranged an exchange whereby Ralf surrendered his land in Middleham and received the vill of Pencher less 134½ acres to be held of Jordan. The record of this transaction has survived only in a second charter which Pudsey issued, also before the date of Boldon Book,<sup>2</sup> and in which he granted to Ralf the remaining land of Pencher to be held of him in chief by homage and service. Certain easements in the forest are added because Ralf in a friendly fashion assented to the bishop's will in the matter of the aforesaid

<sup>1</sup> Coldingham, cap. iv. in *Scriptores Tres.* (Surtees Soc.), pp. 8–9.

<sup>2</sup> The charter is not dated; its period, and that of a good many other documents as well, depends upon the determination of the succession of sheriffs in Durham in the second half of the twelfth century. Fortunately we have material which enables us to accomplish this with a large measure of security. In the first place there are two charters, seemingly contemporary, by which Roger of Eppleton and Emma his wife grant land in Silksworth to Thomas and Philip, sons of Hamo. *Feod.*, 123–124 n. Both of these are witnessed by Ralf Haget, who in the second qualifies himself as 'vicecomes.' Both are also witnessed by Henry Pudsey the bishop's son, and they must therefore be later than his father's accession in 1153. Coldingham in *Scriptores Tres.* (Surtees Soc.), p. 14; *ibid.* App. No. xlv. Roger's charter is also witnessed by Germanus, who was prior of Durham 1163–1183, accordingly they are later than 1163. Ralf Haget was therefore sheriff of Durham at some time between 1163–1183.

Now follow three charters from Geoffrey Fitz Richard to Philip Fitz Hamo. *Feod.*, 124–125 n. The first of these is a confirmation of the charter of Roger and Emma noted above, and would seem to have been issued soon after them. The next two, however, are further grants of land in the same place. The first of these is witnessed by Prior Germanus, Henry Pudsey, and Ralf Haget. The second does not include these names, and, what is more important, it is addressed to Philip Fitz Hamo the sheriff; at some time therefore between 1163–1183 Ralf was succeeded in the office of sheriff by Philip. We are in a position to determine that date approximately. Ralf, as sheriff, witnessed Bishop Pudsey's charter to the city of Durham. Hutchinson, *Durham*, ii. 12. A confirmation of the charter by Alexander III. is dated at the Lateran, 16 March. The third General Council held at the Lateran extended from the 5th to the 19th of March, 1179, and as there was only one other council, and that not a general one, held at the Lateran during Alexander's pontificate, we must refer his confirmation of the Durham charter to the year 1179. Ralf Haget must therefore still have been sheriff in that year. Now in 1183 Philip Fitz Hamo was holding Migley of the bishop 'pro servitio suo,' by which we must understand his service as sheriff, for as certain land in Garmundsway which belonged to Ralf Haget is now being held by someone else, Ralf must be dead. *Boldon Bk.*, s. v. Migley and Garmundsway. Philip accordingly had succeeded Ralf some time between 1179 and 1183, and was holding the office in the latter year. Finally Philip granted his land in Silksworth to the monks of Durham in a charter in which he describes himself as sheriff. *Feod.*, 126 n. In a further grant, which since it refers to the same tenement probably followed soon afterward, he is no longer sheriff; he speaks moreover of Hugh, formerly Bishop of Durham, and among the witnesses appears Reginald Ganant, sheriff of Durham. Philip therefore retained the office at least until Pudsey's death in 1194–1195, for he is charged with certain sums in the pipe-roll of 1197, which contains the accounts during the vacancy. *Feod.*, 18 n.; Pipe R. 8 Ric. I. in *Boldon Bk.* (Surtees Soc.), App. p. iv. We may safely date Ralf Haget 1163–1180, and Philip Fitz Hamo 1180–1194. As the charter under consideration is tested by Ralf it is earlier than 1180.

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exchange.<sup>1</sup> Now the land which formed the subject of this additional grant had not been held of the bishop feudally, but by that special service in the forest and at the time of the 'magna caza' which we have already met with.<sup>2</sup> The whole transaction, then, appears as a movement toward feudalization on the part of the bishop. Another case points in the same direction. We find in Boldon Book that Gilbert holds Heworth for 3 marks and is quit of the works and services which he used to render for it as of thegnage, for Ricknall which he quit-claimed to the bishop. Here then is a case where the ancient tenure of thegnage is transformed into what was no doubt fee-farm. Certainly Gilbert's tenure has that appearance, and we have an instance of thegnage being changed into what is specifically styled fee-farm.<sup>3</sup> Again, at Great Haughton, there are two tenants whose fathers held in drengage, but who, at the bishop's request and in consideration of 4 marks apiece which he gave them, quit-claimed their patrimonies to him and took other land in exchange which at the time of the Boldon survey they are holding in what looks like free socage. Sheraton is another instance of the same process. The vill was a drengage tenement. John had one half of it at 3 marks and is free of the works and services which used to be performed for that half of the drengage in consideration of the vill of Crawcrook which he has quit-claimed to the bishop. Further instances of Pudsey's re-adjustment of tenures by way of exchange may be seen in Boldon Book under Newton-by-Durham, Gateshead, Washington, Twizell, Edderacres, Whitwell, Oxenhall, Newton-by-Thickley, Cornsay, Hedley, Muggleswick, and Bradbury. The conclusion of the matter is clear enough. Under the smooth feudal surface which the Normans had imposed upon the bishopric there survived great disorder and diversity. Tenures that were older than the Conquest, the very meaning of which had perhaps been forgotten, were living on into the twelfth and thirteenth centuries. Open Hatfield's Survey at random, you will find drengage, the special tenure of the Malmanni, and the peculiar renders of the villeins all surviving, and all, or almost all, compounded for money-payments. Had the bishopric been included in the great inquests in the time of John and Henry III. we should no doubt have been better able to illustrate the point in hand. The returns from Northumberland in the *Red Book* and the *Testa de Nevill* are instructive reading on this point, and there is evidence that something of the same sort had been going on in Cumberland and Westmorland at an early period.<sup>4</sup> Now although Durham is omitted from the *Testa*, we have some texts that do a little toward filling that gap on this particular point. These are a series of charters relating to the conversion of tenures in the vill of Wolveston which came into the hands of the prior. Richard the architect or engineer, whom we have already met with, granted to Ralf of Wolveston the land of Aelsi, son of Arkill his grandfather, to be held as freely as Aelsi held it, rendering to Richard and his heirs the drengage service which Aelsi per-

<sup>1</sup> The charter is printed in *Boldon Bk.* (Surtees Soc.), App. No. v.

<sup>2</sup> 'It sciendum est quod predictus Radolphus et heredes sui inveniunt nobis et successoribus nostris in nos et heredibus nostris unum hominem cum ii leporariis, per debitum servitium de terra Nicholai de Pencher quod nobis idem Nicholaus ante excambium facere solebat,' *ibid.*, p. xliii.

<sup>3</sup> 'Willelmus de Hettona miles juratus et requisitus . . . de piscaria de Pol dicit quod vidit Henricum de Orde tenere manerium de Orde cum piscaria de Pol ad feodo-firmam . . . requisitus an tenementum Henrici et heredes sui illud quod non sed thegnagium sed pater Henrici liberavit illud a thenagio et fecit quod ipse et heredes tenerent illud ad feodo-firmam,' *Attestaciones Testium*, etc. in *Feod.*, 223, 224.

<sup>4</sup> See *Amer. Hist. Rev.*, ix. 670.



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formed in Bishop Ranulf's time.<sup>1</sup> Wolveston had come to the monks by the successive grants of Bishops Ranulf Flambard and Geoffrey Rufus,<sup>2</sup> and part of the vill had been granted by the convent to Richard to hold feudally.<sup>3</sup> Richard's charter was confirmed by Henry II.,<sup>4</sup> who describes him as having returned the land to Ralf, as indeed he had. Now this is a beautiful example of an older tenure continuing to exist under the feudal shell. The prior had got a feudal tenant, and was content. Ralf was put in possession of his patrimony, rendering the same drengage services as his father and grandfather had rendered before him, only now the drengage was, so to speak, decapitalized, Richard was holding feudally of the convent, Ralf was holding of Richard in drengage.

There is further evidence from the same vill. Roger of Kibblesworth held of the prior and convent in drengage, and desired to convert his tenure into some other form. Two charters relating to this transaction have been preserved.<sup>5</sup> The first, which is much corrected and interlined, is evidently a rough draft, while the second represents the final version. In the first Roger states the nature of his tenure, explains that against the right and will of the prior he had tried to convert the drengage into a rent charge, and proceeds to quit-claim his original tenement against a money payment and the vill of Koken, which the prior assigns him. The second charter mentions neither the nature of Roger's original tenure nor the friction that seems to have existed between him and the prior. It simply records the surrender of the land at Wolveston in return for a money payment, and the vill of Koken to be held in fee-farm. We must not allow ourselves to be misled by the terms of Roger's acknowledgment in the first charter. It is not likely that the prior was unwilling to compound the drengage for a money rent, since in the sequel he actually paid to bring about the result. It is more probable that Roger's original terms were too high.

From this we see that Bishop Pudsey's policy of normalization was adopted by at least one of his tenants-in-chief, who was, moreover, by no means the least of them, and it will be a fair inference that the others were following his example. But it is not only this policy of exchanging the old tenures that shows us the direction in which the bishop was moving. Further evidence may be drawn from the nature of his entourage. In sharp contrast to his predecessor, Bishop Walcher, he surrounded himself almost exclusively with Normans or those of Norman descent. Pudsey was himself of French birth and connected by blood with the family of the Conqueror.<sup>6</sup> An examination of the test clauses of some forty-five charters<sup>7</sup> issued by him reveals the composition of his 'familia.'

Although the conventional address to the French and English, and the equally conventional conclusion of the test-clause, 'et multis aliis Francis et Anglis,' occur commonly, still among all the names enumerated in these documents only thirteen are English. A typical case occurs in a charter dated 1155. This is a composition between Prior Absalom and Elias Escolland which was confirmed by Bishop Pudsey.<sup>8</sup> It is witnessed by forty-nine per-

<sup>1</sup> *Feod.*, 139-141 nn.

<sup>2</sup> *Ibid.* 139 n, 145 n.

<sup>3</sup> *Ibid.*, 141 n.

<sup>4</sup> *Ibid.*, 140 n.

<sup>5</sup> *Ibid.*, 141 n., 142 n.

<sup>6</sup> Coldingham, cap. ii. in *Scriptores Tres.* (Surtees Soc.), p. 5; *ibid.*, App. Nos. xxvii. xxxii.

<sup>7</sup> *Boldon Bk.* (Surtees Soc.), App. Nos. iv. v. vii. viii. ix.; *Feod.*, index, s.v. Pusat.

<sup>8</sup> *Feod.*, 121 n.

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sons, of whom six bear English names. Seemingly the witnesses are arranged in order of precedence, the more dignified clergy first, then the knights, then the persons of less distinction whether cleric or lay. Among the knights we find the names of Acharias son of Copsi, and of Wilfrei, and in the third group those of Eilric son of Emma, Roger Dreng, Robert Anglais, and Seth. It appears, then, that although in a minority the English were not entirely excluded from Bishop Pudsey's court. It is possible that one or even both of the bishop's sheriffs, Ralf Haget and Philip Fitz Hamo, may have been of English extraction. Still these exceptions do not disturb the main proposition, and if further confirmation were necessary we have only to turn to the list of those who paid scutage in 1197, for either they or their parents must have been holding by military service of Bishop Pudsey. We are confronted with a list of twenty-seven persons who must have been the most important tenants of the bishopric, and there is not an English name among them.<sup>1</sup> Finally, all the military tenures in Boldon Book are in the hands of Normans. The Englishmen are drengs or free tenants in the manor.

As a result of inquiry, then, we shall not believe that Bishop Pudsey was quite successful in the attempt which he made to complete the internal feudalization of the bishopric. The variety of tenure disclosed by Boldon Book, the survival of pre-feudal relations in later documents, Pudsey's numerous exchanges and readjustments, the reputation for an innovator that he got with the local chronicler—all these, and, perhaps more significant than any of these, the very existence of Boldon Book itself, reveal to us at once the bishop's policy and the limited measure of success that attended its application. The end which Pudsey tried to compass by a method at once dynamic and political was later achieved by an evolutionary and economic process. If we turn again to Hatfield's Survey we shall see that despite the terminology all the relations recorded there are as feudal as most fourteenth-century feudalism: they consist, that is, of the tenure of land against money payments in lieu of services. Take one case as an example of many. Lord Nevill is holding the manor of Oxenhall, for which he owes certain rents and services, appropriate to the fourth part of one drengage. We know something of the nature of drengage, but it would have taken a bold man to suggest to a Nevill of that time that his condition was not of the freest and most honourable. So in the fourteenth century, as in our own day, Englishmen refused decent burial to their institutions, preferring to skin and stuff them.

Side by side with the social and legal<sup>2</sup> changes which were taking place in this fashion we are able to discern at once a development and an intensification of economic life. Some aspects of this have already been brought to the reader's attention; the surprising activity and skill in building

<sup>1</sup> Pipe R., 8 Ric. I., in *Boldon Bk.* (Surtees Soc.), App. viii.—ix. For purposes of reference I subjoin the list: Roger de Conyer, Jordan Escolland, Alexander de Hilton, William fil. Thomas, Geoffrey fil. Richard, Jordan Herton, Bertram de Eppelon (Hetton), Philip fil. Hamo, Robert Ridel, John de Romundeb (Romundby), Roger l'Assis, Geoffrey Escolland, Robert de Muschans, Walter de Ferlinton, Philip de Coleville, Henry de Paley, Henry de Ferlinton, Robert de la Lunde, Agnes de Perei, John Arundel, Ralf Bard, Richard de Avercch, Henry Be., Simon de Kyme, Gerard de Canvill, Baldwin Wac, Gilbert de la Ley. These persons rendered an aggregate of 36*l.* 8*s.* 9*d.*

<sup>2</sup> Certain legal changes of a far-reaching character which were taking place at the time have been passed over in silence in the text. They have been elsewhere worked out in detail, and for an account of them the reader is referred to, Lapsley, *County Palatine*, ch. v.



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marking the growth of industry, and the erection of boroughs indicating the development of exchange. There is, however, another phase of the subject which may properly be treated here, and that is the increase of population marked by an intake of new land for cultivation and the appearance of new settlements. Boldon Book mentions seven new vills. The Newtons by Durham, Boldon, and Thickey appear to be earlier than Bishop Pudsey's time, but Cornsay and Hedley, which he gave to Simon the chamberlain 'de wasto nostro,'<sup>1</sup> Oxenhall, 'namely one carucate and two "culturas" of the land of Darlington,' and Old Thickey, 'which was made of the land of Redworth,' are examples of new settlements during Pudsey's pontificate. Then there is evidence of a slower growth. Ralf de Binchester holds Hunwick and the assart of Byers. In Hatfield's Survey we find that Byers has grown into a vill which is held as a sub-manor.<sup>2</sup> The prior and convent were active in this business of taking new land under cultivation. Some time before 1183 they exchanged Hardwick for the bishop's vill of Muggleswick, with the stipulation that they be permitted to clear 160 acres there on the outskirts of the existing settlement.<sup>3</sup> And they seem to have guarded this right on their own land rather jealously.<sup>4</sup> Assarts occur in Boldon Book in connexion with Gateshead, South Sherburn, Lanchester, Hunstanworth, Whickham, and Bedlington.

### APPENDIX I

The following tables are intended to serve partly as an 'index nominum' to Boldon Book, but chiefly to help the reader in checking and testing the classification of tenants adopted in the text. The first table enumerates those tenants who are not included in the peasant communities of villeins, cottiers, and farmers, persons who for one reason or another stand outside the 'engere Gutsverband' and are treated individually. A second table has been added showing what may be called the ministerial and industrial holdings which, it is thought, may be useful for purposes of reference and comparison:—

Place.	Name of Tenant.	Size of Holding.	Dues and Services.
Boldon . . . . .	Robert . . . . .	36 a. . . . .	$\frac{1}{2}$ m.
Newton-by-Boldon .	Wife of Henry de Montana	40 a. . . . .	40d.
Cleaddon and Whitburn.	Ketell . . . . .	34 a. . . . .	16d.; errands.
	John de Whitburn . .	40 a. 1 toft . . .	8s.; "
	Roger . . . . .	" " . . . . .	8s.
	Osbert son of Bosing .	80 a. . . . .	1 m.
Burdon and Ryhope	Elfer de Burdon . . .	30 a. . . . .	8s.; errands.
	Amfred . . . . .	" . . . . .	$\frac{1}{2}$ m.; "
Newbottle . . . .	John son of Henry . .	12 a. 1 toft . . .	12d.
Easington and Thorpe.	Simon . . . . .	$\frac{1}{2}$ car. . . . .	10s.; errands.
	Geoffrey Cokesmath . .	" . . . . .	" "
Shotton . . . . .	Robert Chet . . . . .	30 a. . . . .	5s.; 4 boon-works, ploughs and harrows 1 a.; errands.
	William Lorymer . . .	15 a. . . . .	3s.; errands.
	Saddok . . . . .	" . . . . .	" "
North Sherburn . .	Ulkill . . . . .	30 a. . . . .	40d.; "
	Thomas de Shaldford . .	" . . . . .	" "
Cassop . . . . .	William of Kent . . .	60 a. . . . .	$\frac{1}{2}$ m.; "
South Sherburn . .	Christian the Mason . .	{ 40 a. . . . . }	5s.
		{ 30 a. . . . . }	14d.
	Watling and Sama his wife	60 a. . . . .	$\frac{1}{2}$ m.

<sup>1</sup> *Boldon Bk.* (Surtees Soc.), App. No. vii.

<sup>2</sup> *Hatfield's Survey* (Surtees Soc.), 43.

<sup>3</sup> *Boldon Bk.* (Surtees Soc.), App. No. ix.

<sup>4</sup> *Feod.*, 116 n, 141 n.

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Place.	Name of Tenant.	Size of Holding.	Dues and Services.
Sedgefield . . . .	William of Aldacres . . . .	Unspecified <sup>1</sup> . . . .	16s.
	Utdred of Butterwick . . . .	'Terra' . . . .	$\frac{1}{2}$ m.
Middleham . . . .	Arkell . . . . .	60 a. . . . .	14s.
	Ralf . . . . .	30 a. . . . .	10s.; 5 wodlades.
Norton . . . . .	Alan of Normanton . . . .	1 car. . . . .	10s.; 32 men to work 1 day; 4 carts 1 day for corn; 4 for hay; his tenants 4 boon-works.
Stockton . . . . .	Geoffrey of Hardwick . . . .	36 a. . . . .	2 m.
	Adam son of Walter . . . .	1 car. 1 bov. <sup>2</sup> . . . .	1 m.
	Robert of Cambois . . . .	4 bov. . . . .	$\frac{1}{2}$ m.
		1 bov. . . . .	pro servitio.
Hertburne . . . .		veterum toftum aulæ . . . .	16d.
	Alan Fitz Osbert . . . .	1 bov. . . . .	works and renders as the Norton firmars.
Preston . . . . .	Walter . . . . .	1 car. . . . .	} work and render like Alan of Normanton.
	Orm son of Coket Utting . . . .	1 car. . . . .	
	Richard Rundus . . . .	$\frac{1}{2}$ car. . . . .	
Carlton . . . . .	Elias . . . . .	2 bov. . . . .	10s.
	Suna, 'vidua' . . . . .	2 bov. . . . .	Free of rent and service for her life.
	William son of Ornix <sup>3</sup> . . . .	1 car. . . . .	10s.; magna caza with one dog.
Darlington . . . .	Osbert Rate . . . . .	2 bov. . . . .	32d.; errands.
	The son of Wibert . . . .	2 bov. . . . .	10s.; "
	Odo . . . . .	33 a. 1 toft . . . .	10s.
		26 $\frac{1}{2}$ a. . . . .	10s. until the ward come of age.
	Gaufloie . . . . .	20 a. . . . .	40d.; errands.
	Eugeliamus son of Robert Marshall . . . . .	6 a. . . . .	12d.
Blackwell . . . .	Thomas son of Robert . . . .	1 bov. . . . .	40d.
	Unnamed. Formerly John Russey . . . . .	4 a. . . . .	16d.
	Adam son of Ralf of Stapleton. . . . .	4 bov. 1 cultura of 16 a. 3 rods. . . .	5s. 4d.; errands; superintendence of boon-works.
	Robert Blount . . . . .	1 'parva terra' . . . .	6d.
Great Haughton . .	Gilbert . . . . .	40 a. . . . .	2s.; errands; supervision of boon-works. Compounded drengage.
	Aldred's son . . . . .	40 a. . . . .	" " " " "
	Walter son of Sigge . . . .	36 a. . . . .	12s.; at the bishop's pleasure.
	Tuke . . . . .	2 bov. . . . .	8s.; 4 boon-works with household; 12 days in autumn; errands.
Whessoe . . . . .	Orm brother of Tuke . . . .	2 bov. . . . .	5s.; 4 boon works with household; 12 days in autumn; errands.
	Robert Fitz Meldred . . . .	1 car. . . . .	The service of $\frac{1}{4}$ of a drengage.
	A certain widow . . . .	1 toft and croft . . . .	6d.; 6 days' work and 4 boon-works.
Heighington . . . .	Thomas the Clerk . . . .	4 bov. . . . .	$\frac{1}{2}$ m.; errands; 4 boon-works.
	Hugh Brunne . . . . .	2 bov. . . . .	2s. cornage; 4 boon-works; errands (while his wife lives).
Midbridge . . . .	Simon the Doorward . . . .	60 a. . . . .	1 besant.
	Wekeman . . . . .	$\frac{1}{2}$ car. . . . .	6s.; 3 boon-works; superintends works; errands; 1 day ploughing, harrowing, and mowing; 2 days carting corn and hay.
	Anketill . . . . .	2 bov. . . . .	3s.; 3 boon-works, etc., as Wekeman; scot and castleman with the villeins.
Thickley . . . . .	A certain woman . . . .	3 a. . . . .	6d.
North Auckland . .	William Scott } . . . .	1 $\frac{1}{2}$ a. . . . .	12 esperductas of wheat.
	Elstan } . . . .		
	William Boie } . . . .		
Ewemole . . . . .	Elamrl . . . . .	$\frac{1}{2}$ bov. . . . .	8d. ferm, 9d. cornage; 4 boon-works; errands; forest service.
	Ulframming . . . . .	5 a. . . . .	4s.; 4 boon-works.

<sup>1</sup> W. has held the suit of Ollakres, 'De villata de Ollakres de redditu assisar, et soluto, red. 16s. ut in libro de Boldon,' *Hist. MSS. Soc. (Carta Bull.)*, 55, 120, 121, p. 136.

<sup>2</sup> W. says the husband of the female can be ascertained; I have expressed the holding in terms of acres; here it was impossible.

<sup>3</sup> In *Hist. MSS. Soc. (Carta Bull.)* it is noted as drengage, p. 127.



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Place.	Name of Tenant.	Size of Holding.	Dues and Services.
Escomb— <i>cont.</i>	Alan Picunderake . . .	1 toft and croft 3 a.	24 hens; 300 eggs; 4 boon-works.
West Auckland . . .	William Coupem . . .	2 bov. . . . .	4s.; 3 boon-works; errands; works $\frac{1}{2}$ a.
	Utting son of Robert . . .	1 bov. . . . .	40d.; service as William's.
	Uttred de Quilnerby . . .	2 bov. . . . .	$\frac{1}{2}$ m.; „ „
	Hugh Bridmund . . .	2 bov. . . . .	$\frac{1}{2}$ m.; „ „
	William } brothers . . .	2 bov. . . . .	1 m.; „ „
	Geoffrey } . . .		
	Norman } . . .		
	Elstan . . . . .	4 bov. . . . .	Drengage service.
Wolsingham . . .	William the priest . . .	40 a. . . . .	1 m.
	James his son . . .	60 a. . . . .	1 m.
	Walter Croke . . .	6 a. . . . .	3s. 2d.; superintends works; errands.
	Roger, the man of Gilbert of Middleham . . .	9 a. . . . .	5s.; „ „
	Roger of Bradley . . .	40 a. . . . .	$\frac{1}{2}$ m.; forest service.
	William Noble . . .	40 a. . . . .	„ „ „
			These two enclose and keep meadow at Bradley.
	Thomas de Fery . . .	22 a. . . . .	11s.
	Robert of Roanges . . .	22 a. . . . .	40d.; forest service.
	Henry Shepherd . . .	12 a. . . . .	10s.
	Robert Scot . . .	48 a. . . . .	8s.; forest service.
	Adam the clerk . . .	30 a. . . . .	1 m.
	William of Gisburne . . .	30 a. . . . .	10s.; quit while he is in the bishop's service.
	Geoffrey . . . . .	4 a. . . . .	2s.; superintends boon-works.
Stanhope . . . .	Richard of Yrseley . . .	48 a. . . . .	8s.; but his heirs will have to pay 10s.
	The sons of Gamel of Rogerly . . .	60 a. . . . .	18s.; 1 man for forest service; errands.
	Belnuf del Peke . . .	60 a. . . . .	$\frac{1}{2}$ m.; 1 man for forest service; errands; his heirs must pay 1 m.
	Richard son of Turkill } . . .	60 a. . . . .	{ 1 m.; 1 man for forest service; errands.
	Gamel son of Godric } . . .		
	Alan Russel } . . .	60 a. . . . .	{ 20s.; 4 boon-works with all tenants, but not household.
	Thore } . . .		
	Robert } brothers . . .	30 a. . . . .	{ 10s.; 4 boon-works with household.
	Thomas } . . .		
	Ethelred } . . .	30 a. . . . .	10s.; 8 days' work, each with 1 man.
	Osbert } . . .		
	Arkill Hubald . . .	9 a. . . . .	3s.; 4 boon-works.
	Collan . . . . .	6 a. . . . .	2s.; „
	Richard Blount . . .	22 a. 1 toft and croft . . .	12d.; „
	Edulf Palefrey . . .	Toft and croft . . .	6d.; „
	Ralf . . . . .	Toft . . . . .	4d.; „
	Meldred . . . . .	„ . . . . .	6d.; „
	Hugh . . . . .	„ . . . . .	12d.; „
	Goda . . . . .	„ . . . . .	10d.; „
	Roger nephew of William . . .	„ 6 a. . . . .	2s.
	William Almoner, senior . . .	Toft . . . . .	16d.
	Ralf . . . . .	12 a. . . . .	3s., at the bishop's pleasure.
	3 widows . . . . .	3 tofts . . . . .	The bishop's alms.
	Alan Bruntoft . . .	1 toft . . . . .	Used to render 2s.
Lanchester . . . .	Liulf . . . . .	60 a. . . . .	16s.; magna caza with 1 dog; [errands.
	Wilkill } . . .	40 a. . . . .	12s. 6d.; errands.
	Meldred } . . .		
	Orm . . . . .	1 assart of 8 $\frac{1}{2}$ a. . . .	2s.
	Wife of Geoffrey the priest . . .	1 toft 8 a. . . . .	The bishop's alms.
Witton and Fulford . . .	Theobald . . . . .	8 a. . . . .	3s.
	Hugh . . . . .	16 a. . . . .	At the bishop's pleasure.
Whickham . . . .	Prior of Giseburn . . .	30 a. 1 fishery . . .	The bishop's alms.
Farnacres . . . .	Robert de Yolton . . .	The hermit's land on the Derwent . . .	1 besant.
Bedlington . . . .	Robert Hugate . . .	21 a. (formerly waste) . . .	40d.
		6 a. . . . .	44d.
	Guy . . . . .	Toft and croft . . .	12d.

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Place.	Name of Tenant.	Size of Holding.	Dues and Services.
Bedlington— <i>cont.</i>	Peter of East Sleekburn . . . . .	6 a. . . . .	
Norham . . . . .	Swarbrand . . . . .	1 car. . . . .	20s.
	Eustace son of Roger . . . . .	$\frac{1}{2}$ car. . . . .	10s.
	Jordan . . . . .	$\frac{1}{2}$ car. . . . .	10s.
		Terra in Galoring . . . . .	5s.
	Eribbe . . . . .	" " . . . . .	1 m.
	Elwald Langstrappe . . . . .	$\frac{1}{2}$ car. . . . .	10s.
	Richard son of William . . . . .	$\frac{1}{2}$ car. . . . .	10s.
	Ysaac . . . . .	1 cultura . . . . .	$\frac{1}{2}$ m.
		Bothil . . . . .	10s.

TABLE II

## MINISTERIAL AND INDUSTRIAL HOLDINGS

Place.	Name of Tenant.	Holding.	Office or Industry.
Boldon . . . . .	—	12 a. plough thraves	Pinder; 40 hens; 500 eggs.
Newton-by-Boldon . . . . .	John . . . . .	Newton . . . . .	Baker; 20s.
Wearmouth and Tunstall . . . . .	—	12 a. . . . .	Carpenter; makes ploughs and harrows.
	—	12 a. . . . .	Smith; ironwork; finds coals.
Burdon and Ryhope . . . . .	Amfrid . . . . .	12 a. plough thraves	Pinder; 40 hens; 500 eggs.
	—	30 a. . . . .	Farmer of demesne.
Newbottle . . . . .	—	12 a. plough thraves	Pinder; 40 hens; 500 eggs.
	—	12 a. . . . .	Reeve.
	—	12 a. . . . .	Smith.
	—	12 a. thraves of ploughs of 3 vill.	Pinder; 40 hens; 300 eggs.
Houghton . . . . .	Henry . . . . .	24 a. . . . .	Reeve.
	—	12 a. . . . .	Smith.
	—	4 a., 1 toft . . . . .	Carpenter.
	—	12 a. thraves of ploughs of 3 vill.	Pinder; 60 hens; 300 eggs.
Easington and Thorpe . . . . .	—	8 a. . . . .	Carpenter.
	—	8 a. . . . .	Smith.
	—	8 a. . . . .	Pinder; 80 hens; 500 eggs.
Shotton . . . . .	—	15 a. . . . .	Smith.
	Thomas . . . . .	8 a. . . . .	Pinder; 40 hens; 300 eggs; 3s.
South Sherburn . . . . .	—	12 a. . . . .	Smith; ironwork of ploughs.
Quarringtonshire . . . . .	—	20 a. . . . .	Pinder; 120 hens; 1,000 eggs.
Quarrington . . . . .	—	15 a. . . . .	Reeve.
	—	12 a. . . . .	Smith.
Sedgefield . . . . .	John . . . . .	30 a. . . . .	Reeve.
	—	15 a. . . . .	Smith; ironwork; find coals.
	—	2 a. . . . .	Carpenter; makes and mends harrows and ploughs.
	—	12 a. and plough thraves	Pinder; 40 hens; 200 eggs.
Middleham and Cornford . . . . .	William . . . . .	30 a. . . . .	Reeve.
	" . . . . .	15 a. . . . .	2s.
Norton . . . . .	—	4 a. plough thraves	Pinder; 80 hens; 500 eggs.
Stockton . . . . .	Simon . . . . .	1 toft . . . . .	Smith; 4d.
	—	6 a. thraves of 3 vill.	Pinder; 80 hens; 500 eggs.
Carlton . . . . .	Gerobod . . . . .	4 bov. . . . .	Unspecified; 20s.
	Walter . . . . .	2 bov. . . . .	Miller; 10s.
Darlington . . . . .	—	8 a. . . . .	Smith; ironwork.
	—	9 a. and thraves . . . . .	Pinder; 100 hens; 500 eggs.
Heighington . . . . .	—	2 bov. . . . .	Reeve.
	—	6 a. and thraves . . . . .	Pinder; 80 hens; 500 eggs.
North Auckland . . . . .	—	1 bov. . . . .	Reeve.
	Alan . . . . .	1 toft and croft . . . . .	Cobbler; 4s.; 4 boon-works.
	Simon . . . . .	1 toft and croft . . . . .	Miller; 4s.; 4 boon-works.
	Eustace . . . . .	20 a. plough thraves	Pinder; 80 hens; 500 eggs.
Recomb . . . . .	—	1 toft and croft, 4 a.	Collier; coals for ironwork of ploughs



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Place.	Name of Tenant.	Holding.	Office or Industry.
Wolsingham . . .	Ralf . . . . .	6 a. . . . .	Bee-keeper.
	Adam . . . . .	6 a. . . . .	Reeve : 40d.
	—	5 a. . . . .	Gardener.
	Son of Humphrey . . .	6 a. . . . .	Plough-maker.
	Three Turners . . . .	17 a. . . . .	3,100 trenchers ; 4 boon-works ; help in hay-making.
Stanhope . . . .	—	6 a. . . . .	Pinder ; 40 hens ; 400 eggs.
	Aldred . . . . .	12 a. . . . .	Smith ; 3s.
	Meldred . . . . .	1 toft and croft . .	Smith ; 16d. ; 4 boon-works.
	Lambert . . . . .	30 a. . . . .	Marmorarius ; pro servitio ; other- wise 1 besant.
	William Wilde . . . .	Toft and croft, 6 a. .	Reeve ; pro servitio ; otherwise 2s. ; 4 boon-works.
Lanchester . . . .	—	6 a. plough thraves .	Pinder ; 40 hens ; 400 eggs.
	—	6 a. plough thraves .	Pinder ; 40 hens ; 300 eggs.
Whickham . . . .	Girard . . . . .	24 a. . . . .	Reeve ; pro servitio ; otherwise 4s.
	—	6 a. plough thraves .	Pinder ; 60 hens ; 300 eggs.
Ryton . . . . .	—	5 a. plough thraves .	Pinder ; 30 hens ; 200 eggs.

## APPENDIX II

### CRITICAL EXAMINATION OF THE TEXT OF BOLDON BOOK

The original manuscript of Boldon Book has disappeared. Canon Greenwell, who so ably edited the document for the Surtees Society, conjectured that it was lost in a general spoliation of the Chancery of Durham which took place when Wolsey held the see.<sup>1</sup> It seems likely, however, that the loss occurred at a much earlier time, for we know that a new copy was needed for use in the local exchequer at the close of the fourteenth century—one of our texts dates from this period—and that this, as we shall presently see, was certainly not made from the original. Moreover no new copy of Domesday Book was needed for administrative purposes, and Boldon Book was used at Durham much as Domesday Book was at Westminster.

Four copies of the survey have survived. The oldest MS. is contained in a volume of thirteenth-century transcripts of Durham records, entitled, 'Liber Irrotulatus Prioratus Dunelmensis.'<sup>2</sup> This formed part of the Stowe collection, whence it passed into the possession of Lord Ashburnham, but it is now in the British Museum.<sup>3</sup> This copy we may designate A. The next, which may be called B, was made at the close of the fourteenth century for use on the Durham Exchequer, where it is still preserved.<sup>4</sup> Then the Register of the Dean and Chapter of Durham preserves a copy which was made about the year 1400. This, which is still at Durham Cathedral, we shall call C. Finally, there is a fourth copy in a fifteenth-century hand, to be called D. This once belonged to Bishop Tunstall, but is now preserved at Oxford in the Bodleian Library.<sup>5</sup> Canon Greenwell has no doubt that this is a transcript of the Chapter MS. C. Sir Henry Ellis, who, in 1816, first printed Boldon Book,<sup>6</sup> followed the text of D; and later Sir T. D. Hardy was moved to admiration of it, and even expressed the belief that it might well have been copied directly from the original.<sup>7</sup>

Ellis's text held the field until 1852, when the Surtees Society broke through its rule of printing only inedited documents by commissioning Canon Greenwell to prepare a new edition of *Boldon Book*. This was done, as the learned editor explains in his preface, partly on account of the cost and inaccessibility of the folio edition, and partly because the first editor had printed from a single MS. 'itself much modernized in names, and unquestionably not so correct a transcript as that from which the present book has been printed.'<sup>8</sup> Canon Greenwell's text is that of the Exchequer copy B, collated with C and D, and all the alternate readings are carefully and clearly set out in foot-notes. But he was not permitted to collate A, which was then in the possession of Lord Ashburnham. Canon Greenwell's judgment of Ellis's text seems to have found general acceptance, and the Surtees Society's edition of Boldon Book is the one generally made use of and referred to.

It is naturally with the greatest diffidence that one dissents from the opinion of a scholar so learned and so experienced as Dr. Greenwell, but a study of his text of Boldon Book, collated with A, which he had not seen, has brought me to a conclusion very different from his. To state, and if possible to maintain, that conclusion, is the purpose of the present note.

<sup>1</sup> *Boldon Bk.* (Surtees Soc.), pref. vii.

<sup>2</sup> *Hist. MSS. Com. Rep. VIII.*, App. iii. p. 286.

<sup>3</sup> Stowe MS., No. 930. The transcript of Boldon Bk. commences at fol. 36.

<sup>4</sup> On all these MSS., see Hardy, *Catalogue of Materials* (Rolls Ser.), ii. 443, and *Boldon Bk.* (Surtees Soc.), pref. viii.-ix. The Durham Exchequer MS. is now in the Halmote Court Office.

<sup>5</sup> MS. Bodl. Laud, 542.

<sup>6</sup> *Dom. Bk.* (Rec. Com.), vol. iv. App.

<sup>7</sup> Hardy, *Catalogue of Materials* (Rolls Ser.), ii. 443-444.

<sup>8</sup> *Boldon Bk.* (Surtees Soc.), pref.

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The first and most striking result of the collation of A with the other texts is that point for point (with a few trifling exceptions to be discussed presently) it agrees with C and D as against B. Take first the disposition of the material. To illustrate this it will be convenient to describe A, C, and D as M, and to refer to the pages of the Surtees Society's edition :

Pencher . . . . .	B 7, following Newbottle.
	M 6, „ Little Burdon.
Butterwick to Horncliffe . . .	B 37-42, from Sheraton to the end of the text.
	M 13-25, between Norton and West Auckland.
Stockton to West Auckland . .	B 13-25, between Norton and Little Coundon.
	M 37-42, from Sheraton to the end of the text.
Preston . . . . .	B 14, following Hertburn.
	M 14, between Stockton and Hertburn.
Heighington . . . . .	B 21.
	M 21. The notice of Simon's land is removed from the body to the end of the entry.
Newton-by-Thickley . . . . .	B 23, follows Redworth.
	M 23, precedes Redworth.
Smallees . . . . .	B 33, follows Britley.
	M 33, precedes Britley.
The interpolated passage 'Scien- dum quod . . . a servitute.'	B 39-40, stands between Bedlington and Norham.
	M 38, follows West Sleckburn.

All this, taken in connexion with a pretty steady consistency in the reading of words and phrases on the part of M as against B, raises the presumption that either A, C, and D (M) have a common parent or else that C and D were copied directly from A.

At this point, accordingly, the exceptions to the rule of agreement among A, C, and D become of importance, and must be examined. They are as follows :

- Wearmouth, p. 5. A and B retain the record of the cottiers omitted by C and D.
- Middridge, p. 22. The position of the last two clauses in the sentence, 'Wekeman . . . Episcopi,' is reversed in A.
- The clause, 'et falcet 1 die,' in the succeeding sentence is omitted by C and D.
- Stanhope, p. 30. The first half of the sentence 'pinderus . . . ova' is omitted by A.
- Langley, p. 32. The word 'Domino' preceding 'Henrico' is omitted by A and B.
- Bedlington, p. 38. A gives 'cassum' for the clearly correct 'tassum' of B, C, and D.
- Tillemouth, p. 41. A and B give 'Ellmouth,' C and D 'Tillemouth.'

This evidence suggests that A, C, and D were probably copied from a common original rather than that C and D were copied from A. For on the second hypothesis the restitution of a lost word or clause, as in the Stanhope and Langley entries, although not impossible, is scarcely probable.

Assuming then that A, C, and D have a common parent which we may designate X, it becomes of importance to determine the date and authority of this text. At the outset we must dismiss Sir T. D. Hardy's conjecture that A might have been copied directly from the original survey. A long passage contained in all four texts records an elaborate composition of service for money payments conceded by Bishop Walter.<sup>1</sup> Since A was copied in the thirteenth century, this must refer to Walter de Kirkham, 1249-1260,<sup>2</sup> the only bishop bearing that Christian name who sat at Durham before the year 1388. Then the Cornsay entry records that Robert of Caen is freed from suit of court at Sadberge by reason of a payment made to the bishop. Now, although this stands in A, it could not have formed part of the original survey, for the reason that Bishop Pudsey did not acquire the wapentake of Sadberge until six years after the compilation of Boldon Book,<sup>3</sup> and could not before that time therefore have dispensed anyone from suit of court there. In like manner the Merley entry, which also stands in all the texts, contains the following phrase, 'de alius serviitiis queta est per cartam Philippi Episcopi,' and the only Bishop Philip of the thirteenth century was he of Poitou, who succeeded Pudsey and died in 1207-08.<sup>4</sup> The Whitworth entry affords a similar case. Thomas de Acley holds the vill for the fourth part of a knight's fee, but this was a commutation of drengage service accorded by Bishop Philip in a charter which has survived to us.<sup>5</sup> Finally, we read that at Stockton, Adam son of Walter holds 1 carucate and 1 boate of land for 1 mark, but when he leaves the bishop's service he will do the same services as pertain to the half-carucate of Walter; and then that at Preston a member of the same

<sup>1</sup> 'Sciendum quod Dominus Walterus . . . perpetuum a servitute,' *Boldon Bk.* (Surtees Soc.), pp. 39-40.

<sup>2</sup> Le Neve, *Fatti*, etc. iii., 287.

<sup>3</sup> Vid. sup. p. 9.

<sup>4</sup> Le Neve, *Fatti*, iii. 284.

<sup>5</sup> *Boldon Bk.* (Surtees Soc.), App. No. vi.



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manor, Adam son of Walter of Stockton, holds a half-carucate for 10s. only. A fair inference from all this is that Walter was the tenant at the time of the survey, that his son succeeded him, increased his holding and compounded for his services, and that the record of the change crept into the text of Boldon Book. To sum up, then, X cannot possibly have been the original survey, but must be regarded as a thirteenth-century copy. The 'terminus ante quem' is the first year of Bishop Walter's pontificate, 1249, and the several allusions to Bishop Philip incorporated in the text bar the assumption that the passage in which Bishop Walter is mentioned was simply imported wholesale into the original. But we have means of arriving at a 'terminus post quem' for X as well. A, as we know, is written in a hand that cannot be later than 1300, but this rough identification of period may be confirmed and made more accurate by the comparison of the various passages in our texts. These are from the record of Bishop Walter's concession; I give them in parallel columns—on the one hand, under M, the form in which this passage occurs in A, C, and D; and, on the other, under B, that in which it occurs in the Exchequer MS. :

M. ' Dominus autem Episcopus concessit Roberto,' etc.      B. ' Dominus Antonius Episcopus, concessit Roberto,' etc.

The interpolation begins, it will be remembered, by an account of the bishop's concession, and this stands at the opening of a fresh paragraph. Bishop Anthony Bek sat at Durham from 1284 until 1313,<sup>1</sup> and the splendour and opulence of his pontificate tended to obscure in men's minds the memory of his predecessors. During and after his time, therefore, the misreading of 'Antonius' for 'autem' would be natural enough. Before his time, on the other hand, it would have neither excuse nor explanation, for he was the first bishop of Durham to bear the name of Anthony. For all the mystery of iniquity that worked through the mediæval copyist, we can scarcely imagine him violating the sense of a passage capriciously to introduce an hitherto unheard-of Bishop Anthony. A, then, would seem to have been written down before Bek's accession in 1284. We have reached the conclusion, then, that X, the common original of A, C, and D, was a copy of Boldon Book made between the years 1249 and 1284.

It is plain enough from what has gone before that B was not copied from X, but derives from another original. It must now be shown that X is older than the original of B, which we may call Z, and represents more nearly the primitive text of Boldon Book. There is, indeed, an antecedent probability that this is the case. B is evidently a practical record designed for use in the business of the exchequer, and it would be the aim of its compiler, therefore, to notice and incorporate, as far as possible, the details of the changes that had taken place between Bishop Pudsey's survey and that of Bishop Hatfield, to which, it will be remembered, this document forms an appendix.<sup>2</sup> With this in mind we may turn to the evidence supplied by the text itself. The passage on page 3, 'Johannes filius Eustacii . . . constitutus,' contains a reference to Bishop Walter and is, therefore, an interpolation, but it occurs in B only. Geoffrey Hardwick holds Norton-by-Hardwick in A, C, and D; in B the tenant is given as Adam son of Gilbert of Hardwick. This, naturally, has no probatory force unless our hypothesis be established by other evidence, but in that event the divergence will become significant and the passage is accordingly noted here. The striking case of Whitworth has already come before us in another connexion, but it may not be omitted here. B simply notes that Thomas de Acley holds the vill for the fourth part of a knight's fee, and this, as we know, was by grant of Bishop Philip. A, C, and D, however, retain the record of what was obviously the earlier condition. 'In Whitworth there are sixteen villeins, every one of whom holds one bovatē of 20 acres,' etc., then follows the note of Thomas's tenure by military service. An equally striking case may be found at Heighington. A, C, and D give in the body of the entry the tenement of the reeve followed by that of Hugh Brunne, who had certain lands during the lifetime of his wife; finally, quite at the end of the whole entry, occurs this passage: 'Simon hostiarius ibidem tenet terram quæ fuit Utredi cum incrementis quæ Dominus Episcopus ei fecit usque ad lx acras, et reddit pro omnibus i besancium ad Penthecostem.' In B the reeve's holding has dropped out and its place in the record is filled by the introduction of Simon's tenement, but instead of naming Simon's predecessor Utréd, the land is simply called 'terra vetus.' Finally, Hugh has disappeared and his place is assumed by Thomas de Pemme, who 'tenet ii bovatas quæ fuerunt Hugonis Brun.' Now these changes must have taken place after the composition of Boldon Book in 1183. Simon the doorward seems to have been a person of importance at the close of Bishop Pudsey's pontificate and during that of his successor Bishop Philip. He witnesses Pudsey's charter, and in 1197 appears among the servants of Bishop Hugh who owe fines.<sup>3</sup> Then we find him witnessing a charter which is dated in the monastic rental 1207,<sup>4</sup> and he is described as having made a clearing in a place called Bereford in a charter of Gilbert son of Meldred, the grandson of

<sup>1</sup> Le Neve, *Fasti*, iii. 288.

<sup>2</sup> *Boldon Book* (Surtees Soc.), pref. viii. ; Bishop Hatfield died in 1381.

<sup>8</sup> *Feod.*, 177 n.; Pipe R., 8 Rich. I., in *Boldon Book* (Surtees Soc.), App. x.

<sup>4</sup> *Feod.*, 55 n.

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Dolfin, the founder of the Nevill family.<sup>1</sup> This dates from Bishop Philip's time, for the witnesses, including Aimeric, archdeacon of Durham, are mostly the same as those who figure in one of that bishop's charters.<sup>2</sup> Now if, as seems very probable, the land in Heighington was granted to Simon either by Bishop Hugh just before his death or by Bishop Philip just after his accession, some record of the transaction would have been kept and might have been incorporated into the text of Boldon Book when a new copy was being prepared for use in the exchequer. Some such process seems to be reflected in the texts before us; A, C, and D appear to be following an annotated copy of the original; B a later recension, which had taken up into itself the material written in or tacked on to that copy. But we are not done with Simon yet. A, C, and D record that at Killerby 'Simon hostiarius tenet dominium pro iii marcis,' but B reads 'Simon hostiarius tenet i carucatam terræ pro servitio duodecimæ partis feodi unius militis.' There would be no inherent difficulty in the transformation of a farmer of the demesne into a military tenant of the same land, but the reversal of the process, at that time and place, is scarcely conceivable. We infer, then, that the bishop had enfeoffed Simon with the demesne of Killerby some time after 1183, that the change had been recorded in some such manner as that suggested above, and then found its way into the text of B. Now on turning to Hatfield's Survey we find the following passage, under the heading Killerby: 'Johannes Killerby tenet i mess. et lxi acras terræ per serv. forins. quondam Simonis hostiarii vel Simonis dorwardi, et solebat red. p. a. 40s. per cartam, modo per xii partem feodi unius militis 40s.' This goes far toward confirming our conjecture. The charter or indenture by which Simon held the demesne would no doubt have been anterior to Boldon Book, for as we have seen the demesne farmer commonly held 'per cirografum,' and the 40s. of Hatfield's Survey represents nearly enough the four marks (53s. 4d.) of the earlier record. But this text will yield us further information. The writer must have had under his eye two versions of Boldon Book, else what could he have known of Simon's original tenure? What should these versions have been but X, the annotated copy from which A, C, and D derive, and Z, which is the parent of B? The reasoning which we have applied to the record of Simon's tenure at Heighington and Killerby may be repeated in respect to the holding of a certain Monachus Cocus,<sup>3</sup> at West Auckland. A, C, and D note that William Scot, Elstan, and William Boie are holding an acre and a half of land at West Auckland. In B, however, the entry is as follows: 'Monachus Cocus tenet pro servitio suo ad voluntatem Episcopi i acram et dimidiam quas Willelmus Scot et Elstanus et Willelmus Boie tenebant, et infra parcam et extra xix acras et dimidiam de terra lucrabili, et de terra non lucrabili x acras.' Then we have a charter by which Bishop Pudsey grants to Monachus Cocus one toft and croft in Auckland together with 31 acres, 'in campis ejusdem villæ,' in three parcels as follows: 10 within the park (parca), 3 within the enclosure of the old park (vivarium), and 18 within the dry hedge<sup>4</sup> (infra halham).<sup>5</sup> This gives exactly the measure of the holding recorded in the text of B. Then Bishop Philip of Poitou, desiring to enclose his park, effected an exchange by which Monachus surrendered his 13 acres in the park in return for other 13 on the moor of Auckland.<sup>6</sup> Finally, Monachus conveyed the whole of his Auckland tenement to the prior and convent.<sup>7</sup> Now the inference from all this is plain enough. Pudsey's grant must have been made after the composition of Boldon Book, probably late in his pontificate, for we must allow time for the disappearance of the three tenants recorded in the A C D text, and the survival of Monachus Cocus well into the pontificate of Bishop Philip. Then, just as we surmised in the case of Simon the doorward, the record of the transaction was preserved at the exchequer and crept into that annotated copy of Boldon Book which we have supposed B to be following. Finally, we have another passage which goes to prove that X is an older and purer text than Z. At Escomb, A, C, and D have the entry, 'Ulframing tenet v acras,' but in B the entry stands, 'Umfridus carectarius tenet vi acras quæ fuerunt Ulfi Ranning.' Canon Greenwell prints a fragment of the charter by which Bishop Pudsey conveyed this land to Humphrey,<sup>8</sup> so we must regard this case as parallel with those of Simon and Monachus Cocus. The incorrect form of the earlier entry, 'Ulframing,' for 'Ulfi Ranning' serves to remind us that in X we have not to do with the original, but with a copy that was earlier and nearer to the primitive text than Z could have been.

X, then, although affording us a better text than Z, is itself fallible, and we must not exclude the possibility that in certain cases (though by no means in the majority of them) Z will have

<sup>1</sup> *Feod.* 53 n.; cf. 56 n., and Round, 'Origin of the Nevilles,' in *Feudal England*, 488-490.

<sup>2</sup> *Feod.* 53 n., 54 n.; *Boldon Book* (Surtees Soc.), App. No. vi.

<sup>3</sup> I am at a loss for a translation of his name. He certainly was not a monk, for he had a wife and could acquire and dispose of land, see *Feod.*, 168 n., 169 n., 177 n., and Canon Greenwell's description of his seal with the device of a griffin passant and the legend, 'Sigillum Monachi Coci.' *Boldon Book* (Surtees Soc.), 24 n. If he were really a cook, he must be an early example of a 'cordon bleu.' <sup>4</sup> *Feod.*, 177 n.

<sup>5</sup> Presumably a place enclosed by a hedge of dry or dead brushwood; see Ducange, *s. v.* hala, and cf. *Durham Account Rolls* (Surt. Soc.), iii; gloss. *s. v.* halland.

<sup>6</sup> *Feod.* 177 n.-178 n.

<sup>7</sup> *Ibid.* 178 n.

<sup>8</sup> *Boldon Book* (Surtees Soc.), p. 25.



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preserved a purer reading, which common sense, or internal probability, may enable us to discern. There are in B a dozen or so passages in which this seems to be the case, and they now demand our attention. In the Gateshead entry, with regard to the demesne B reads 'cum instauramento ii carrucarum,' A gives 'incrementis,' and C and D 'incremento.' Now, as we have seen, the stock of so many ploughs was the regular phrase of describing the content of the demesne farm; it is often used in this sense by A, as at Great Haughton, and since the X derivatives differ among themselves here, we shall do better to follow the reading of B. The same argument will apply to the smith's land at Shotton. I give the variants in parallel columns:—

B.	A.	C and D.
Faber 1 bovatom de xv acris pro suo servitio.	Faber 1 bovatom de xv s(olidis) pro suo servitio.	Faber 1 bovatom pro 15s. pro suo servitio.

The confusion here may well have been due to a clerical error in X, but, in view of what we have seen with regard to the custom of industrial holdings and the normal size of the bovat, there can be no doubt that B gives us the true reading. Again, under Edderacres the usual proper name Nigillus as given by B is clearly intended rather than the uncommon 'Sigillus' of A, C, and D; and in the last line of the same entry the sense demands the 'reddit' of B rather than the 'reddendo' of A, C, and D. The word 'bordarius,' as we have seen, occurs in Boldon Book twice, at Sedgfield and at Middleham and Cornford. The terms of the entry leave little doubt as to what sort of a tenant is meant—a bordar, namely, and not a bondman. But A, C, and D give the unusual and clearly incorrect form 'bondarius,' and it is only from B that we get the accurate term 'bordarius.' At Garmondsway, where Bishop Pudsey's sheriff Ralf Haget had held land, the name is spelt 'Hager'<sup>1</sup> in all the texts except B. At Mainsforth, according to B, certain eight bovates render eight hens and eighty eggs, but A, C, and D give one hen and four eggs, which is far too small in comparison with the like render of other villis. At Norton, B reads, 'tota villa reddit ii vaccas de metride,' while A, C, and D give 'ii marcas de metride'; but on turning to Hatfield's Survey we find that the tenants of Norton 'solvunt pro ii vaccis de metrich . . . 12s.'<sup>2</sup> It might of course be objected that Hatfield's Survey was making use of some late or corrupt text of Boldon Book, and that in 1183 these Norton tenants had compounded for their render of milch-cows. But the balance of probability is the other way; there is no other case in Boldon Book of a money composition for this particular render, and Hatfield's Survey, in all cases where the incident occurs, shows us that the composition had been at the rate of six shillings for a cow, not one mark as here. At West Auckland, where the renders and services are calculated 'de unaquaque bovata,' B records 18 bovates and 18 villeins, but A, C, and D give 21 bovates and 18 villeins. Although this of course is not impossible, the symmetrical arrangement commends itself as more probable. In the record of Elstan's land at the same place, A, C, and D omit the necessary 'sua' in line 3; and in line 6, instead of 'illa terra est in manu Episcopi,' read 'alia terra est modo in manu Episcopi,' which scarcely makes sense in the context. We retain, therefore, the readings of B as they occur in the printed text. At Wolsingham, A, C, and D read, 'tres coronatores xvii acras et reddunt mmmc scutellas,' which is inherently improbable, as the coroner does not appear in the Durham records until 1279,<sup>3</sup> and as it is not likely that then or at any other time he would be rendering trenchers. B gives the manifestly correct reading, 'tornatores.' This slip may fairly be charged to the account of the careless scribe, that scapegoat of critics, who is responsible for the success of so many hypotheses and such countless emendations. B records the vill of Holome (Hulam), where A alone reads 'Bolmum.' But in a charter by which Ralph Haget grants this vill to his nephew,<sup>4</sup> and again in Hatfield's Survey,<sup>5</sup> we have the assurance that the reading of B is correct. Finally, at Grendon, where B gives the name of a certain tenant as 'Stephanus,' A, C, and D have the barbarous form 'Thepers.'<sup>6</sup> Although these cases unquestionably help us toward a purer text of Boldon Book there is nothing in them to weaken our contention that X is an older, and in the main a much better version of our document than Z, although a derivative of Z has enabled us to correct fourteen slips, all verbal and mostly no more than clerical errors, in the derivative of X.

Before proceeding to state the conclusions of this necessarily minute and tedious examination, we must consider one case which has no direct bearing upon our argument, but which must be noticed as it has the appearance of an interpolation in all our texts. This is the vill of Whickham. The only divergence among the four texts in this entry consists of trifling verbal difference, and the inversion of the order of one or two unimportant words; these may safely be disregarded, and yet there is something in the passage that arrests our attention and awakes our suspicion. Unlike any other entry in Boldon Book, all the villein renders and services are described in the past tense,

<sup>1</sup> We get the true spelling in the charters, see *Feod.*, 132 n., 134 n.

<sup>2</sup> *Hatfield's Survey* (Surtees Soc.), p. 175.

<sup>3</sup> Lapsley, *County Palatine*, 86.

<sup>4</sup> *Feod.*, 136 n.

<sup>5</sup> *Hatfield's Survey* (Surtees Soc.), 153.

Al. Thepers, Thepirs, the form is Thepls.

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‘solebant reddere,’ ‘solebant falcare prata,’ and so on. Then, when the enumeration is complete, these significant words appear: ‘nunc autem prædictum manerium de Quicham est ad firmam . . . et reddit xxvi l.’ Particular attention is due to the fact that this is the first, last, and only time that the word ‘manerium’ occurs in the whole record, and that Whickham was not the capital messuage of any one of the bishop’s manors. This circumstance, coupled with the unique form of the entry in the ‘tunc et modo’ style of Domesday Book, raises a strong presumption that the vill had been put to farm since the composition of Boldon Book and that we have here the record of the change. This is, I believe, sufficient ground for the rejection of the last part of the passage, beginning with the words ‘nunc autem’ as an interpolation.

We may now sum up the results of our inquiry. The four MSS. of Boldon Book represent two MS. families. X, the parent of three of these, A, C, and D, dates from some period between 1249 and 1284, and derives either from the annotated original of Boldon Book itself (a very doubtful conjecture) or (as is more likely) from a copy made from that original at some time after the accession of Bishop Philip of Poitou, 1197, and before that of Bishop Walter Kirkham, 1249. Z, the parent of our fourth text, B, would seem to have been a copy of the annotated original made at some period that cannot be ascertained, but certainly later than 1197, and kept abreast of the changes that were taking place from that time up to the close of the fourteenth century, a practical or working text in effect. Then, after the compilation of Hatfield’s Survey, the whole document was recast, altering the disposition of the material and incorporating the notes and additions into the text in such wise as to make it available for further use in the exchequer. The Auditor’s MS. from which Canon Greenwell printed might very well have been the actual original of this recension, since it occurs in the same volume and the same hand as Hatfield’s Survey. One conjecture, which, since it is conjecture and no more, has been reserved until now, may be thrown out. There is some evidence that a survey standing half-way between those of Pudsey and Hatfield has been lost.<sup>1</sup> Is it not possible that Z was the working copy of Boldon Book in the exchequer until Bishop Beaumont’s survey was made; that it was then allowed to fall into neglect until the end of the fourteenth century, when with the need of a new survey the need of a copy of Boldon Book was also felt; and that Z was taken up as the fullest, the most available, and therefore to the uncritical mind of the Middle Ages the most authoritative copy of Bishop Pudsey’s survey?

<sup>1</sup> See *Hatfield’s Survey* (Surtees Soc.), pref. p. v. and p. 51.



# TEXT OF THE BOLDON BOOK<sup>1</sup>

In the eleven hundred and eighty-third year of our Lord's Incarnation, at the feast of St. Cuthbert in Lent,<sup>2</sup> Lord Hugh, Bishop of Durham, caused to be described in the presence of himself and his court all the returns of his whole bishopric, assizes and customs, as they then were and as they had been aforetime.

But the city of DUNOLM' [Durham] was at farm and was rendering 60 marks.<sup>3</sup> The mills of the aforesaid town and of Quarringtonshire 36 marks. The mint (*cunei monete*) used to render 10 marks, but the Lord King Henry the Second reduced the rent of 10 marks even to 4 marks by reason of the mint which he first appointed at Newcastle, and at length he took away the mint, which had been used from times long previous. The land of Reginald the fuller in the same town renders 3 shillings; the land of Lefwin the reeve, across the water and near the meadow, 16 pence; the land in the same place of Waleran of Chester renders 8 pence. Thurstan of the chapel holds one toft near the orchard (*virgultum*) of the lord bishop by the grace and favour of the bishop himself. The bakehouse (*furnum*) of the same town renders 10 marks.

William, sometime abbot of Peterborough (*de Burgo*) holds NEWTONAM [Newton] near Durham by the grace and favour of the bishop himself, and renders for the half of the demesne which Richard the engineer (*ingeniator*) held, 1 mark. In the same vill Ralf the clerk holds 60<sup>4</sup> acres partly of the land which used to be Robert Cuk's and partly of the assarts which the bishop gave him in exchange for 2 bovates in MIDILHAM [Middleham] at 40 pence, but he is quit of this rent as long as he is in the service of the lord bishop.

PLAUSWORTH [Plausworth] which Simon Viel (*Vitulus*) holds renders 20 shillings and carts (*quadrigat*) wine with eight oxen and goes on the great hunt (*caza*) with two hunting-dogs.

GATESHEVED [Gateshead] with borough, mills, fisheries and bakehouses and with three parts of the arable land of the same town renders 60 marks. The fourth part of the arable, with the assarts which the lord bishop caused to be made, and the meadows, are in the hands of the lord bishop with the stock of two ploughs. Osmund's land renders 22 shillings and 6 pence.

PARVA USEWORTH [Little Usworth], which

William holds, renders 10 shillings and carts wine with eight oxen and goes on the great hunt with two hunting-dogs.

Ulkill's BEDYK [Biddick] does the service of the sixth part of one knight's fee.<sup>5</sup>

CESTRIA [Chester] with the villeins and the demesne without stock and with the fisheries and mills of the same town, renders 24 marks.

The mill of Urpath is at farm and renders 4 marks.

PELOWE<sup>6</sup> [Pelaw] and the half of PIKTRE [Picktree] which Waleran of Chester holds render 2 marks.

William of Hertburn holds WESSINGTON [Washing-ton] except the church and the land belonging to the church, in exchange for the vill of Hertburn which he quitclaimed for this, and he renders 4 pounds and goes on the great hunt with two hunting-dogs, and when the general aid comes he ought to give in addition 1 mark of the aid.

In BOLDONA [Boldon] there are twenty-two villeins, every one of whom holds 2 bovates of land of 30 acres and renders 2 shillings and 6 pence of scotpenny and the half of a scot-chalder (*scatcheldram*) of oats and 16 pence of averpenny and five wagonloads of wood (*quadrigatas de wodelades*) and two hens and ten eggs, and works through the whole year three days in the week except Easter and Whitsunweek and thirteen days at Christmastide, and in his works he does in the autumn four boon-days at reaping with his entire household except the housewife (*huswywa*) and they reap moreover 3 roods of the standing crop of oats (*averipe*) and he ploughs 3 roods of oat-stubble (*averere*) and harrows (it). Every plough (team)

<sup>5</sup> The following passage is interpolated between the Biddick and Chester entries in the Auditor's MS. It forms no part of the original text, but is added here as it has a certain value :—

John son of Eustace and Alexander his brother who were arraigned as serfs were acquitted by a jury.

Gilbert son of Humphrey of Durham holds 34 acres of land in Newbottle moor to himself and his heirs for ever, rendering annually to the exchequer at Durham 28s. 4d. at the four terms appointed in the bishoprick of Durham and he shall have eight oxen on Newbottle moor by the charter which he has from the lord bishop.

Roger son of Robert Bernard holds 48 acres in Helmygdene by metes as is more fully contained in the charter which he has of lord Walter bishop of Durham, rendering annually 10s. to the exchequer at Durham at the four terms appointed in the bishoprick of Durham.

<sup>6</sup> A : Pelhou.

<sup>1</sup> Stowe MSS. 930; alternative readings supplied by the Auditor's MS. (Surtees Soc.) are given in footnotes and indicated by the letter A.

<sup>2</sup> i.e. 20 March.      <sup>3</sup> A : 24 marks.      <sup>4</sup> A : 24.

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of the villeins, also, ploughs 2 acres and harrows (them), and then they have once (only) a dole (*corrodium*) from the bishop and for that week they are quit of work, but when they make the great boon-days they have a dole. And in their works they harrow when it is necessary and they carry loads (*faciunt radas*), and when they have carried them every man has a loaf of bread; and they mow one day at HOCTONA [Houghton] in their work until the evening, and then they have a dole. And every two villeins build one booth for the fair of St. Cuthbert. And when they are building lodges and carrying loads of wood they are quit of all other works.

There are twelve cottiers (*cotmanni*) there, every one of whom holds 12 acres, and they work through the whole year two days in the week, except at the three feasts aforementioned, and they render twelve hens and sixty eggs.

Robert holds two bovates of 36 acres and renders half a mark. The pinder (*punderus*) holds 12 acres and he has a thrave (*travam*) of corn from every plough and he renders 40<sup>1</sup> hens and 500 eggs.

The mill renders 5½ marks.

The villeins in their work in each year ought to make, if need be, a house 40 feet in length and 15 feet in breadth, and when they make it every man is quit of 4 pence of averpenny.

The whole vill renders 17 shillings of cornage and 1 milch cow.

The demesne is at farm with stock of 4 ploughs and 4 harrows, and renders for 2 ploughs 16 chalders (*celdras*) of wheat and 16 chalders of oats, and 8 chalders of barley, and for the other 2 ploughs 10 marks.

John the pantler (*panetarius*) holds NEWTONA [Newton] by Boldon for 20 shillings a year. In Newton by Boldon twelve malmen hold 2 bovates each of 15 acres and render from every 2 bovates 5 shillings of rent and 2 hens and 20 eggs and they plough and harrow at Boldon every man 1 acre and for every 2 bovates they do four boon-days in the autumn with two men.

The wife of Henry of Montana holds 40 acres for 40 pence.

In CLEVEDONA [Cleaddon] and WHITBERNE [Whitburn] there are 28 villeins and every man holds, renders, and works as they of Boldon. Ketel holds 2 bovates of 34<sup>2</sup> acres and renders 16 pence and goes on the bishop's errands (*legationibus*). John of Whitburn holds 40<sup>3</sup> acres and 1 toft and renders 8 shillings and goes on the bishop's errands. Roger holds 40 acres and 1 toft and renders 8 shillings. Osbert, son of Bosing, 80 acres and renders 1 mark. Twelve cottiers hold, work and render as they of Boldon. The pinder holds and renders as he of Boldon. The two vills render 30 shillings of cornage and 2 milch cows.

The demesne is at farm with a stock of 5½ ploughs and 5½ harrows, and renders for 2½ ploughs 20 chalders of wheat and 20 of oats and 10 of barley, and for the other 3 ploughs 15 marks.

The sheep with the pasture of Esscurre<sup>4</sup> [ ] and Cleaddon are in the hand of the lord bishop.

In WERMOUTHE [Wearmouth] and TUNSTALL [Tunstall] there are 22 villeins and every man holds, renders, and works as they of Boldon. Six cottiers hold and work and render as they of Boldon. The carpenter, who is an old man, has for his life 12 acres for making ploughs and harrows. The smith has 12 acres for the iron-work of the ploughs, and the coal which he finds. The two vills render 20 shillings of cornage and 2 milch cows. The pinder holds and renders as he of Boldon. The demesne is at farm with a stock of 20 oxen and 2 harrows and 200 sheep and renders with the mill 20 pounds. The fisheries render 6 pounds. The borough of Wearmouth 20 shillings.

In REFHOPE [Ryhope] and BIRDENA [Burdon] there are 27 villeins who hold, work, and render as they of Boldon. Elfer of Burdon holds 2 bovates and renders 8 shillings and goes on the bishop's errands. Amfrid holds 2 bovates freely while he is holding the demesne at farm, and when he gives it up he shall render half a mark and shall go on the bishop's errands. Three cottiers hold, work, and render as they of Boldon. The pinder holds and renders as he of Boldon. The mill renders 1 mark. The two vills render 37 shillings of cornage and 2 milch cows. The demesne is at farm with a stock of 3 ploughs and 3 harrows and with half a carucate without stock and with 300 sheep, and renders 28 chalders of oats<sup>5</sup> and 14 of barley and 6 marks for the 300 sheep.

Little Burdon which John of Houghton holds renders 10 shillings and ploughs with 4 oxen and goes on the great hunt with two hunting-dogs.

William Basset has PENCHER [? Painshaw] in exchange for the land which his father had in Midilham [Middleham], except 260 acres and 14½ acres, as well of arable as of moor-land which he holds of the bishop in chief, for which he renders 4 marks, and for a certain mill 2 marks. But the rest of the vill he holds from Jordan de Escolland, from whom he used to hold (*tenebat*) the land of Middleham.

The villeins of SOUTH BEDIC [Biddick] hold their vill at farm and they render 5 pounds and find 200 men for mowing in the autumn and 36 carts for carrying corn to Houghton.

In NEWBOTILL [Newbottle] there are 16 cottiers every man of whom holds 12 acres, and works the whole year two days in the week and

<sup>1</sup> A : 24.

<sup>2</sup> A : 24.

<sup>3</sup> A : 60.

<sup>4</sup> A : Estsupre.

<sup>5</sup> A : and 28 chalders of wheat.



## BOLDON BOOK

does in his work four boon-days in the autumn with his entire household except the housewife, and renders 1 hen and 5 eggs; and (there are) 3 other cottiers every man of whom holds 6 acres and works from Whitsunday to Martinmas two days in the week. John son of Henry holds 1 toft and 12 acres for 12 pence in exchange for the land which he used formerly to hold in Herringtona [Herrington]. The reeve holds 12 acres for his service. The smith 12 acres for his service. The pinder holds 12 acres and has one thrave of corn from every plough of Newbottle and of Biddick and of Herrington, and renders 40<sup>1</sup> hens and 300 eggs. The demesne of 4 ploughs and the sheep with pasture are in the hand of the bishop.

In HOCTONA [Houghton] there are 13 cottiers who hold, work, and render as they of Newbottle, and 3 other half-cottiers who work as the three aforesaid of Newbottle. Henry the reeve holds 2 bovates of 24 acres for his service. The smith 12 acres for his service. The carpenter 1 toft and 4 acres for his service. The pinder 12 acres and he has thraves of the ploughs of the same vill and of the vill of Wardona [Wardon] and of Mortona [Morton] and renders 60 hens and 300 eggs. The mills of Newbottle and of Biddick with half of the mill of Rayntona [Rainton] 15 marks. The demesne of 4 ploughs and the sheep with the pasture are in the hand of the bishop.

In WARDONA [Wardon] are nine firmars who hold 18 bovates every one of which is of 13½ acres. They render 8 pence for every bovat and work 20 days in the autumn with one man for every bovat, and they harrow 4 days with one horse for every 2 bovates and they do 4 boon-days with their entire household except the housewife, included in the said work of 20 days, and they cart corn for two days and hay for one day, and for every bovat they render 1 hen and 5 eggs.

In MORTONA [Morton] there are 16 firmars who hold 21<sup>2</sup> bovates every one of 12½<sup>8</sup> acres, and they render 8 pence for every bovat and they work 20 days in the autumn with one man for every bovat, and they harrow eight days with one horse for every 2 bovates, and they do 4 boon-days as they of Wardon, and they cart corn and hay 6 days, and they carry 8 loads to Durham in the year or 4 to Aukland, and for every plough of the vill they plough 1 acre at Houghton, and they render hens and eggs as they of Wardon.

In ESYNTONA [Easington] and THORPA [Thorpe] there are 31 villeins and every man holds, renders, and works as the villeins of Boldon. Simon holds half a carucate and renders 10 shillings and goes on the bishop's errands. Geoffrey Coke-smith holds half a carucate and renders 10 shillings and goes on the bishop's errands. The carpenter of ploughs holds 8 acres for his service. The smith 8 acres for his service. The pinder holds

8 acres and renders 80 hens and 500 eggs. The two vills render 30 shillings of cornage and two milch cows. The mills of Easington and Shotton render 8 marks. The demesne is at farm with a stock of 4 ploughs and 2 harrows and renders 24 marks. The sheep with the pasture are in the hand of the bishop.

In SIOTTONA [Shotton] there are 17 villeins and every man holds, renders, and works as the villeins of Boldon. Robert Chet holds 2 bovates and renders 5 shillings and does 4 boon-days in the autumn; he ploughs and harrows 1 acre and goes on the bishop's errands. William Lorymer holds 1 bovat and renders 3 shillings and goes on the bishop's errands. Saddok holds 1 bovat for 3 shillings and goes on the bishop's errands. The smith 1 bovat of 15 acres for his service. The whole vill renders 20 shillings<sup>4</sup> of cornage and one milch cow. Thomas the pinder holds 8 acres and renders 40 hens and 300 eggs and 3<sup>5</sup> shillings. The demesne is at farm with a stock of 3 ploughs and 200 sheep and renders 24 chalders of wheat and the same amount of oats and for the sheep 4 marks.

Walter de Buggethorpe holds the vill of TUSELA<sup>6</sup> [Twizell] in exchange for the half of CLACSTONA [Claxton] and renders 30 shillings and goes on the great hunt with one hunting-dog and when the common aid comes he ought to give 2 shillings in addition.

Adamson of John held ETHEREDESACRES [Edder-acres] in exchange for the land which his father held in Great Halctona [Haughton]. Afterward he sold the half of the same vill to Neal, brother of John the clerk, to be held of the bishop in chief, and he renders for the same half a mark. And Drew of Middleham for the other half, which he has in pledge of the aforesaid Adam, renders in like manner half a mark.

The Prior and Canons of GISBURNA [Guisborough] hold TREMEDUNA<sup>7</sup> [Trimdon] in free, pure, and perpetual alms quit of all rent and service forever.

In QUERINGDONSHIRE [Quarringtonshire], namely, in NORT SIRBURNE [North Sherburn] and SHADEFORD [Shadforth] and CAZEHOPE [Cassop] there are 51 villeins, and every man holds, renders, and works as they of Boldon. Also in North Sherburn, Ulkill holds 2 bovates for 40 pence of rent and goes on the bishop's errands. And Thomas of Shadforth holds 2 bovates for 40 pence of rent and goes on the bishop's errands. In Cassop William of Kent holds 4 bovates for half a mark and goes on the bishop's errands.

In SOUTH SHERBURN [Suthshirburne] Christian, the mason, holds 40<sup>8</sup> acres, which the bishop gave him from the moor, for 5 shillings, and 2 bovates which used to belong to Arkill for 14 pence, but of these he shall be quit while he is in the service of

<sup>1</sup> A : 60.

<sup>2</sup> A : 25.

<sup>3</sup> A : 12.

<sup>4</sup> A : 11 shillings.

<sup>5</sup> A : 4.

<sup>6</sup> Stowe MS. : Suyfela.

<sup>7</sup> Stowe MS. : Trendon.

<sup>8</sup> A : 60.

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the bishop for his work as mason. Watling, with Sama his wife, holds 4 bovates and renders half a mark. Also 5 firmars hold there every man 12 acres and renders 2 shillings and 1 hen and 20 eggs, and does 4 boon-days in the autumn, and for every one of their ploughs they plough 1 acre. Also there are 10 cottiers there, every man of whom holds 6 acres, and they work from Lammas-day to Martinmas two days in the week, and from Martinmas to Lammas-day one day in the week. The smith holds 12 acres there for making the iron gear of the ploughs.<sup>1</sup> The pinder of Quarringtonshire holds 20 acres, and renders 120 hens and 1,000 eggs. The demesne of Sherburn is at farm with a stock of 2 ploughs and 2 harrows, and renders 6 pounds. The demesne of 4 ploughs of Queringdona [Quarrington] and the sheep with the pasture are in the hand of the bishop. The reeve holds 1 bovat there for his service. The smith 12 acres for his service. Quarringtonshire renders 75<sup>2</sup> shillings of cornage and 3 milch cows.

WHITEWELL [Whitwell], which William holds in exchange for the land which Merimius used to hold in Quarrington, renders half a mark.

In TRILLESDEN [Tursdale] there are 24 bovates, every one of 15 acres, and every 2 bovates render 5 shillings of rent and 2 hens and 20 eggs, and they plough and harrow 1 acre at Quarrington, and they do 4 boon-days in the autumn with 2 men. The mill is in the hand of the bishop, and is not yet put to farm; in like manner also the toft of the hall and the orchard (*virgultum*) and the woodland (*nemus*) and the meadows.

In SEGGEFELD [Sedgefield] there are 20 villeins, and every man holds, renders, and works as they of Boldon. Also there are in the same vill 20 firmars, every man of whom holds 3 bovates and renders 5 shillings, and ploughs and harrows half an acre, and finds 2 men for mowing 2 days and the same number for raking and piling hay, and 1 cart for 2 days for carrying corn and hay in the same manner. And all the firmars do 4 boon-days in the autumn with their entire household except the housewife. John the reeve has 2 bovates for his service, and if he give up the office of reeve he shall render and work as the other firmars. The smith 1 bovat for the iron gear of the ploughs which he makes, and he finds coal. The carpenter 12<sup>3</sup> acres for making and repairing ploughs and harrows. The pinder 12 acres, and thraves as the others, and he renders 40<sup>4</sup> hens and 200<sup>5</sup> eggs. Five bordars hold 5 tofts and render 5 shillings and do 4 boon-days. The toll of beer 3 shillings. The villeins render 20 shillings of cornage, the whole vill 1 milch cow. The mill renders 6 marks. The mill pond of FISHBURNA [Fishburn] 2 shillings. William of Aldaces 16 shillings. Utdred of

Butterwick, for the land which he holds there, half a mark.

William holds HERDEWYK [Hardwick] and renders 10 shillings.

In MIDELHAM [Middleham] and CORNFORD [Cornford] there are 26 villeins, and every man holds, renders, and works as they of Boldon. Arkell holds in Middleham 4 bovates and renders 14 shillings. Ralf 2 bovates and renders 10 shillings and 5 cartloads of wood. Seven cottiers, of whom every man holds 6 acres and works from Lammas-day to Martinmas, 2 days in the week, and from Martinmas to Lammas-day 1 day in the week. Four bordars render for 4 tofts and crofts, 4 shillings and do 4 boon-days. William the reeve holds 2 bovates in Cornford for his service, and when he lays down the reeveship he renders 4 shillings of rent, and for a certain other bovat which he holds there he renders 2 shillings. The two vills render 17 shillings and 4 pence of cornage and 1 cow. The demesne as well of Middleham as of Cornford, with the meadows and pasture and sheep, is in the hand of the bishop.

In GERMUNDESWEYA [Garmundsway] there are 5 bovates which used to belong to Ralf Haget,<sup>6</sup> which the bishop has of his escheat, and they render 16 shillings and 8 pence and 10 hens and 100 eggs. And the bishop has there 4 bovates of his purchase which are lying waste.

In MAYNESFORD [Mainsforth] there are 17 bovates of escheat and purchase, of which 8 render 20 shillings and 8 hens and 80 eggs,<sup>7</sup> and they cart corn one day and hay another, and they do 4 boon-days for every 2<sup>8</sup> bovates with 1 man; 9 other bovates lie in pasture with the moor. Robert of Mainsforth holds the rest of the vill in free service.

In NORTONA [Norton] there are 30 villeins, every man of whom holds 2 bovates, and they render and work in all ways as they of Boldon, excepting cornage, which they do not give for the lack of pasture. In the same vill 20 firmars hold 40 bovates and render for every 2 bovates half a mark, and they plough and harrow half an acre, and find 2 men for 2 days for mowing, and the same number for raking and piling hay, and 2 carts for 1 day or 1 for 2 days for carting corn, and the same number for carting hay. And all the firmars do 4 boon-days in the autumn with their entire household except the housewife. Alan of Normanton holds one carucate for 10 shillings and finds 22 men to work for 1 day or for part,<sup>9</sup> as need be, and he finds 4 carts 1 day or 2 for 2 days for carting corn and in like manner for carting hay, and if he has men they shall do 4 boon-days in the autumn with the

<sup>6</sup> Stowe MS. : Hager.

<sup>7</sup> Stowe MS. : 1 hen and 4 eggs.

<sup>8</sup> Stowe MS. omits the 2.

<sup>9</sup> The reading of the Auditor's MS. '*et partito*' seems here more satisfactory than the '*et pro toto*' of the other MSS.

<sup>1</sup> A. : 6 ploughs.

<sup>2</sup> A. : 12.

<sup>3</sup> Stowe MS. : 12. <sup>4</sup> A. : 24. <sup>5</sup> A. : 400.



entire household except the housewife, but he and his own household shall be quit. Geoffrey of Hardwick holds 36 acres of the land of Northtona juxta Herdewic [Norton by Hardwick], and renders 2 marks at the bishop's pleasure. The mills have 8 acres and the meadows near the mill, and render 20 marks. The pinder has 8 acres and thraves of corn of Norton, like the others, and renders 80 hens and 500 eggs. Twelve cottiers hold tofts and crofts in the same vill and 13 acres in the fields, and they render 16 shillings and scatter hay, which they rake and help in making hayricks and in stacking corn and hay.<sup>1</sup> The meadow of Northmeadows is in the bishop's hand. The toll of beer of Norton renders 5<sup>2</sup> shillings. And the whole vill renders 2 milch cows.<sup>3</sup>

BUTERWYK [Butterwick] renders 32 shillings and 9 pence<sup>4</sup> of cornage and 1 milch cow and 8 scot-chalders of malt and the same of meal and the same of oats. And every plough (-team) of the villeins ploughs and harrows 2 acres at Sedgefield. And the villeins do 4 boon-days for every house with 1 man. And they cart a tun of wine and the millstone of Sedgefield. The dreng keeps a dog and horse and goes on the great hunt with 2 hunting-dogs and 5 ropes, and does suit of court and goes on errands.

BRADFERTONA [Brafferton] renders 24 shillings and 1½ pence<sup>5</sup> of cornage and 1 milch cow and 1 castleman, and 5 chalders of malt and the same of meal and the same of oats. Henry<sup>6</sup> goes on the great hunt with 2 hunting-dogs and 5 ropes and does suit of court, but keeps neither a horse nor a dog.

BYNCESTRE [Binchester] renders 5 shillings of cornage and 1 milch cow and 1 castleman and 4 chalders of malt and the same of meal and the same of oats. And every plough of its villeins ploughs and harrows 2 acres at Condona [Coundon]. And every one of them does 3 boon-days in the autumn for every bovat with 1 man, and carts a tun of wine and a millstone to Aukland. The dreng keeps a horse and a dog and goes on the great hunt with 2 hunting-dogs and 5 ropes, and does suit of court and goes on errands.

URPATH [Urpeth] renders 60 shillings rent at the four terms, and ploughs and harrows 8 acres at Chester, and does 4<sup>7</sup> boon-days in the autumn, every boon-day with 24 men and a fourth boon-day with 12 men. The dreng keeps a dog and a horse and goes on the great hunt with 2 hunting-dogs and 15 ropes, and carts a tun of wine and a millstone to Durham and does suit of court and goes on errands and mends the half of the mill-

pond and mill-house of Chester with the men of Chester.

IN BEDLYNGTONA [Bedlington] there are 80 bovates and every one is of 16 acres and renders 4 shillings rent and 1 wagonload of wood, and they mow the whole meadow and lift and cart the hay and make hayricks. And with the help of the other vills of Bedlingtonshire they cart timber and millstones, and in like manner they make the mill-pond, and in like manner they enclose the court and cover in the hall, and in like manner they prepare the fish-pond, and in like manner they carry loads as far as Newcastle and as far as Fenwyc [Fenwick] and no further. Robert Hugate holds in the same vill 21<sup>8</sup> acres, which were waste, and renders 40 pence, and in another part 6<sup>9</sup> acres and renders thence 44 pence. Guy holds 1 toft and 1 croft and renders 12 pence. Seven cottiers render 8 shillings. Peter of Estlikburna [East Sleekburn] holds 6 acres there. Every bovat renders 1 hen.

WESTLIKURNA [West Sleekburn] renders 6½ marks of rent and carries the writs of the lord bishop as far as the Tweed, and goes on errands and does suit of court, and the vill builds the mill and the mill-pond, with one man from every house, and they carry loads as far as Newcastle and Fenwick, when they go there for themselves. And they enclose the court and cover in the hall and provide the fish-pond like the men of Bedlington. Turkill, who was the man of the bishop, renders 12 hens for his quittance to the bishop. Edwin renders 12 hens. Patrick renders 1 pound of pepper.

NEDIRTONA [Netherton] renders 5 marks of rent and carries loads and renders other services like West Sleekburn.<sup>10</sup> Robert son of Gospatric

<sup>8</sup> A : 12.

<sup>9</sup> A : 11.

<sup>10</sup> The text is here relieved of a long passage interpolated in all of our MSS. Although it forms no part of Bishop Pudsey's survey, it has considerable historical value, and is accordingly printed here:—

‘It is to be noted that the lord Walter bishop of Durham granted to all the free men and their tenants of Netherton, Great Sleekburn and Cambois, who hold the aforesaid vills for 12 carucates of land with appurtenances, that they and their heirs should be quit of the carriage of the victuals of the bishop himself, and of the steward and constable of Durham, namely, from Bedlington to Fenwick and from Bedlington to Gateshead; and that they should be quit of roofing the bishop's hall at Bedlington and of repairing the bishop's walls about his court, and of conveying his timber to his mill, and of roofing the mill, and of making or mending the mill-pond, and of carrying millstones. They shall be quit as well of merchet and aid except when the free men of the bishoprick give an aid, and of carrying the bishop's writs and of making or repairing the fish-pond. And for the relief from this service they shall give the bishop every year half a mark for every carucate. The aforesaid lord bishop granted that all the aforesaid men of the aforesaid vills should grind their corn at the sixteenth measure, and that they should be free from suit of

<sup>1</sup> A : 6 shillings and work each for 14 days in the year and do 4 boon-days in the autumn.

<sup>2</sup> A : 3.

<sup>3</sup> Stowe MS. reads ‘marcas’ for ‘vaccas.’

<sup>4</sup> A : 32 shillings. <sup>5</sup> A : 3½ pence.

<sup>6</sup> A : Thomas.

<sup>7</sup> A : 3.

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renders 24 hens. Arnold son of Utred 12 hens. William Neuton 6 hens. Ralf son of William 12 pence.<sup>1</sup>

CHABINGTONA [Choppington] renders 4 marks of rent, and carries loads and performs other services like West Sleekburn.

CAMBOISE [Cambois] renders 4 marks 2 shillings and 8 pence and carries loads and performs other services like West Sleekburn. The brothers Edmund and Robert render 12 hens.

ESTLIKURNA [East Sleekburn] renders 4 marks 4 shillings and 8 pence of rent and 40 hens, and carries loads and performs other services like those of West Sleekburn. A certain cottier renders 12 pence.

The mills of Bedlingtonshire render 24 marks.

In NORHAM [Norham] Swarbrand holds 1 carucate of land and renders 20 shillings a year at the four terms appointed in the bishopric. Eustace son of Roger holds half a carucate and renders in like manner 10 shillings. Jordan holds half a carucate and renders 10 shillings, and for the land which he has in Galoring 5 shillings. Eribbe<sup>2</sup> for the land which he has in Galoring 1 mark. Elwald Langstirapp holds half a carucate and renders 10 shillings. Richard son of William<sup>3</sup> holds half a carucate and renders 10 shillings. Isaac for one culture which is called Counterig half a mark, and for Bothil 10 shillings.

multure and for this grant they will give for every carucate of land half a mark a year. The sum of this relief of service, in money, 12 marks. But the lord bishop (A : Dominus Antonius episcopus. Stowe MS. : Dominus autem episcopus) granted to Robert of Choppington and Agnes Maydok, that they should be quit of all the aforesaid services, and that they should grind their corn as is said above and that they should be free of suit of multure, and they hold two carucates of land with appurtenances in Choppington. And for this relief they will give 25s. every year, of which the aforesaid Robert will give 20s. and Agnes 5s.—the sum 25s.

The lord bishop Walter granted to Robert of Pain, Edmund son of Edmund, John son of Patrick, Lawrence son of Edward, Walter son of William, Robert son of Henry, Thomas son of Edmund, and Henry son of Peter, who hold Little Sleekburn for 4 carucates with appurtenances; that they should be quit of all the aforesaid services and they shall give for the relief from this service half a mark annually for every carucate. And they may grind their corn as is said above, and they shall give for the relief from this service half a mark for every carucate of land. And they shall be quit of the toll of beer and of the 40 hens which they used to render. And for this concession and relief they will give in common every year 2 marks. The sum of Little Sleekburne 5 marks.

The tithery of Cambois is farmed to Adam Cambois (A : Chamus) and his heirs for 3s. annually, freely and quietly.

The lord bishop Walter absolved John son of Thomas of Bedlington from servitude for ever.

<sup>1</sup> A : 12 pence.

<sup>2</sup> A : C. e. <sup>3</sup> A : Richard son of Ulkill.

The borough of Norham with the toll and stallages and forfeitures of the same borough 25 marks. The mills of Norhamshire and the mills of Elandshire (Islandshire) 80 marks. The waters of the bishop 16 marks and 44 pence. The demesne of Norham is at farm with a stock of 3 ploughs and 3 harrows, and with sown land and with the services of the villeins of Grendona [Grindon] and with the services of Adam of Torner' [Thornton] and renders 16 marks. But there remain in the hand of the bishop the meadows and pastures of Norham and the services of the villeins of Grindon, as much as are needed for mowing the meadows of Norham and lifting and carting the hay.

CORNEHALL [Cornhill] renders 12 pounds.<sup>4</sup>

TILMOUTH [Tillemouth] performs the service of a half a knight.

HETONA [Hetton] in like manner the service of half a knight.

TWISELE [Twysell] and DUDEHOWE [Dudhoe]<sup>5</sup> 20 marks, and to the general aid 1 mark or less and 5 pounds of relief.

Stephen of Grindon 4 marks and to the general aid 1 mark or less and 20 shillings of relief.

Ten villeins and a half of GRENDONA [Grindon] render 21 shillings rent and they work through the whole year, every one with one man 2 days in every week, and they plough and harrow for every carucate of theirs 1 acre, and every man renders 2 hens at Christmas and 20 eggs at Easter, and they mow the meadows of Norham and lift the hay and carry it, and they carry loads and go on errands while the bishop is in the neighbourhood. The land which used to belong to Wynday of Grindon renders 20 shillings. The land at rent, 7 shillings and 6 pence.<sup>6</sup>

NEWBIGINGA [Newbiggin], 40 shillings.

UPSETLINGTON [Upsetlington], 40 shillings.

The gage (*vadium*) of the bishop which he has from the wife of Maubert 50 shillings.

TORNT [Thornton] renders 40 shillings, and shall plough and harrow for every plough of the vill 1 acre, and finds in every week in the autumn 2 men from every house except the house of the dreng, and they shall carry the corn of the lord bishop<sup>7</sup> and do the services of the mill, and they shall carry the rent to Durham.

In HORNECLYFFE [Horncliff] there are 18 villeins of whom every man has 2 bovates, and renders 2 chalders of wheat,<sup>8</sup> and works from Martinmas to Whitsunday one day in the week with one man, from Whitsunday to Martinmas 2 days in the week with one man, and does 4 boon-days in the autumn with his entire household except the housewife, and shall plough and

<sup>4</sup> Stowe MS. omits. <sup>5</sup> Stowe MS : Audeham.

<sup>6</sup> A : 7 shillings.

<sup>7</sup> A adds : until it has been carried, and shall make the bishop's houses.

<sup>8</sup> A : 2 oras de firma.



harrow 1 acre for every plough, and shall give 2 hens at Christmas.

In WEST AUKLAND [West Aukland] there are 18 villeins who hold 18<sup>1</sup> bovates and render for every bovat 5 shillings, and find in the autumn for every bovat 2<sup>2</sup> men for reaping, and they mow the whole meadow and make the hay and carry it and then they have a dole once, and they cart corn for 2 days and they render 12<sup>3</sup> hens and 180 eggs and 1 milch cow, and they carry 3 loads between Tyne and Tees. William Coupem holds 2 bovates and renders 4 shillings of rent, and ploughs and harrows half an acre and does 3 boon-days in the autumn and goes on the bishop's errands between Tyne and Tees. Utting son of Robert<sup>4</sup> holds 1 bovat and renders 40 shillings and ploughs and harrows half an acre and does other services like William. Uttred of Quilnerby holds<sup>5</sup> 2 bovates and renders half a mark and ploughs 1 acre and does other services like William. Hugh Bridmund holds<sup>6</sup> 2 bovates and renders half a mark and ploughs 1 acre and does other services like William. The brothers William, Geoffrey, and Norman<sup>7</sup> hold 2 bovates and render 1 mark<sup>8</sup> and plough 1 acre and do other services like William. Alan Fullo<sup>9</sup> (holds) 1 toft and 1 croft for 2 shillings,<sup>10</sup> and he does 4 boon-days. And 4 other cottiers for their tofts and crofts render 4 shillings and 4 pence and do boon-days. Elstan the dreng held 4 bovates and rendered 10 shillings and did 4 boon-days in the autumn with all his tenants except his own household, and ploughed and harrowed 2 acres and went on the bishop's errand between Tyne and Tees at his own cost, and found 4 oxen for carting wine; and that land is now in the hand of the bishop until Elstan's son be of age. From that land the lord bishop has remitted 12 acres quit to the wife of Elstan for the support of her sons, but the rest of that land renders 13 shillings of rent and does the other services which Elstan used to do.

All the villeins of ALCLETSHIRE [Auklandshire], namely of North Aclet [Aukland] and West Aukland and Escumba [Escombe] and Newtona [Newton] find for every bovat 1 rope for the bishop's great hunts, and they build the bishop's hall in the forest 60 feet in length and 16 feet in breadth within the posts with a buttery and a larder and a chamber and a privy. Also they build a chapel 40 feet in length and 15 feet in width, and they have 2 shillings as a favour (*de caritate*), and they make their part of the hedge about the lodges. And on the bishop's departure they have a full tun of beer, or the half of one if he remained away. And they must

keep the eyries of falcons in the district of Ralf Callidus. And they construct 18 booths in the fair of St. Cuthbert. Moreover all the villeins and firmers go on the roe-hunt (*rahunt*) at the summons of the bishop, and to the service of the mills of Auklandshire.

In PARVA CONDUNA [Little Coundon], there are 12 cottiers, every man of whom holds 6 acres and works from Lammas to Martinmas 2 days in the week, and contrariwise 1 day in the week, and they do 4 boon-days and render 1 hen and 100 eggs. The demesne of 6 ploughs in Greater Coundon with pasture and sheep is in the hands of the bishop.

Geoffrey<sup>11</sup> of Lutrington renders 20 shillings for his vill of LUTRINGTONA [Lutrington], and does 3 boon-days in the autumn with all his men, excepting his own household, and goes on the bishop's errands and finds 4 oxen for carting wine, and goes on the bishop's great hunts.

Peter renders 8 shillings for his vill of HENKNOLLE [Henknoll], and finds 4 oxen for carting wine.

In WYTEWORTH [Whitworth] there are 16 villeins, every man of whom holds 1 bovat of 20 acres and renders and works (in) all things.<sup>12</sup>

Thomas de Acley holds WHITWORTH A [Whitworth] for the free service of the fourth part of one knight.

Ralf of Binchester holds HUNEWYC [Hunwick] and renders 8 shillings of rent and 4 shillings for Robert's assart. The assart of Byres  $\frac{1}{2}$  mark.

HARPERLEIA [Harperley] renders 20 shillings.

In WOLSHINGHAM [Wolsingham] there are 300 acres which the villeins hold and render 9 marks of rent, and they reap and cart all the bishop's corn of the demesne of Wolsingham with the help of the bishop's oxen, and they mow the whole meadow of Bradleia [Bradley] and lift the hay and cart it, and they do 180 days' work at the bishop's order, and they cart 120 loads of wood, and they do 1 boon-day at Bradwode [Broadwood] with the entire household except the housewife, and 4 boon-days at Wolsingham, and at all their boon-days they have a dole, and when they mow the meadows and cart the corn and hay every man has a loaf of bread. William the priest holds 40 acres and renders 1 mark. James his son holds 60 acres at Grenwelle [Greenwell] and renders 1 mark. Walter Croc 6 acres and renders 3 shillings and 2 pence, and goes on the bishop's errands, and is over the workmen in reaping and mowing. Roger the man of Gilbert of Middleham 9 acres, and he renders 5 shillings and goes on errands and is over the workmen. Roger of Bradley 40 acres at Bradley and he renders half a mark, does the service of the forest, namely 40 days in the fawning (*fonneson*) and rut-

<sup>1</sup> Stowe MS. : 21.      <sup>2</sup> A : 3.

<sup>3</sup> A : 18.      <sup>4</sup> A : Aldred.

<sup>5</sup> A : Uttred the forester and Richard hold.

<sup>6</sup> A : Hugh and Godemund hold.

<sup>7</sup> A : John, Robert, and Julian.

<sup>8</sup> A : half a mark.

<sup>9</sup> A : Edwin.      <sup>10</sup> A : 12 pence.

<sup>11</sup> A : Walter.

<sup>12</sup> In Stowe MS. the entry ends abruptly here, and there is a space of one line before the note of Thomas de Acley's tenure; cf. sup. App. II.

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ting (*ruyth*) times. William Noble 40 acres in like manner as Roger aforesaid. And there Roger and William enclose and keep the meadows at Bradley. Thomas of Fery 22 acres and he renders 11 shillings. Robert of Roanges 22<sup>1</sup> acres, and he does the bishop's service in the forest and he renders 40 pence. Ralf the beekeeper has 6 acres for his service in keeping the bees. Adam the reeve holds 6 acres and renders 40 pence.<sup>2</sup> Henry the shepherd 12 acres, and renders 6 shillings.<sup>3</sup> Robert Scot 18 acres, and he renders 8 shillings and does the service of the forest like Roger of Bradley. Adam the clerk 30 acres, and he renders 1 mark. William of Gisburne 30 acres, and he renders 10 shillings, but he is quit of these while he is in the bishop's service. Geoffrey 4 acres, and he renders 2 shillings and is over the workmen at the boon-days. The gardener holds 5 acres for his service of the garden. Humfrey holds 4<sup>4</sup> acres of the bishop's alms, and his son 6 acres and makes ploughs. Three turners (hold) 17 acres, and they render 3,100 trenchers (*scutellas*), and do 4 boon-days and help in mowing the meadows and lifting the hay. The pinder 6 acres, and he renders 40 hens and 400 eggs. The mills of Stanhope [Stanhope] and Wolsingham render 10 marks. The demesne of Wolsingham and Rogerleia [Rogerley] with the stock of 5 ploughs and 3 harrows, and with sown acres as is contained in the indenture is at farm and renders 16 chalders of wheat and the same of barley and 70 of oats.

The demesne of BRADWODE [Broadwood] with the stock of 3 ploughs is in the hand of the bishop.

In STANHOPA [Stanhope] there are 20 villeins, of whom every man holds 1 bovine and renders 2 shillings and works 16 days with 1 man between Whitsunday and Martinmas, and carts corn 4 days with 1 cart and does 4 boon-days, and mows the meadows 2 days at the bishop's costs, and makes the hay and carries it, and when he makes the hay he has one loaf of bread, and in like manner when he carries corn; and he carries loads and does errands between Stanhope and Wolsingham, and carries game (*venationes*) to Durham and Alclet [Aukland]. Also all the villeins construct a kitchen, larder, and dog-kennel (*canillum*) for the great hunts, and they find litter (*lecticam*) for the hall, chapel, and chamber, and they carry all the bishop's victuals from Wolsingham to the lodges. Richard of Gaseley holds 18 acres and renders 8 shillings in his lifetime, and his heir after him shall render 10 shillings. The sons of Gamel of Rogerley hold 60 acres and render 18 shillings, and find one man in the forest 40 days in fawning and rutting time, and they go on errands. Belmuf of the Peke 60 acres, and he renders half a mark in his lifetime, and his heirs after him

1 mark, and he does the same amount of the service of the forest as the sons of Gamel, and he goes on errands. Richard son of Turkill and Gamel son of Godric in like manner hold 60 acres and render 1 mark and do the service of the forest like the sons of Gamel, and they go on errands. Alan Russel and Thore, 60 acres, and they render 20 shillings and do 4 boon-days in the autumn with all their men except the housewives and their own households. Robert and Thomas his brother (hold) 30 acres for 10 shillings, and they do 4 boon-days in the autumn with their whole household except the housewife. Ethelred and Osbert 30 acres, and they render 10 shillings and they work, each with one man, 8 days in the autumn. Aldred the smith 12 acres and renders 3 shillings. Arkill Hubald 9 acres for 3 shillings and does 4 boon-days like the others. Collan 6 acres for 2 shillings and does 4 boon-days. Richard Blount holds 22<sup>6</sup> acres and 1 toft and 1 croft for 12 pence and does 4 boon-days. Edulf<sup>6</sup> Palefrey holds 1 toft and 1 croft for 6 pence and does 4 boon-days. Meldred the smith 1 toft and 1 croft for 18<sup>7</sup> pence and does 4 boon-days. Ralf 1 toft for 4 pence and does 4 boon-days. Meldred 1 toft for 6 pence and he does 4 boon-days. Hugh 1 toft for 12 pence and does 4 boon-days. Goda, 1 toft for 10 pence and does 4 boon-days. Roger, nephew of William, 1 toft and 6 acres for 2 shillings. William Almoner, the elder, 1 toft for 16 pence. Ralf<sup>8</sup> for 12 acres 3 shillings, at the bishop's will. Lambert the marble mason (*marmorarius*) 30 acres for his service, as long as he shall be in the bishop's service, and when he gives up the bishop's service he renders 2 besants, or 4 shillings. William Wilde holds 1 toft and croft and 7 acres for his service, and when he lays down the office of reeve he shall render 2 shillings and do 4 boon-days. Three widows hold 3 tofts of the bishop's alms. Alan Bruntoft 1 toft which used to render 2 shillings. Four tofts are in the bishop's hands, without houses, for which meanwhile 11 pence are paid. All the villeins and all the men who hold by rent furnish the mill pond and carry millstones (the pinder holds 6 acres and has his thraves)<sup>9</sup> and renders 40 hens and 400 eggs.

Ralf Sly (*cautus*) holds FROSTERLEY [Frosterly] for half a mark.

In LANGCHESTRE [Lanchester] there are 41 bovates every one of 8 acres which 10<sup>10</sup> villeins hold, and they render for every bovine 30 pence, and with the help of the cottiers they mow the whole meadow and they lift the hay and cart it, and they bring up the pannage swine, and while they are mowing they have a dole once, and when they bring the swine every man has a loaf of bread. Liulf holds 60 acres there and renders

<sup>6</sup> A : 20.

<sup>6</sup> A : Ralf.

<sup>7</sup> A : 16.

<sup>8</sup> A : Ralf 'cautus.'

<sup>9</sup> Stowe MS. omits.

<sup>10</sup> A : 20.

<sup>1</sup> A : 12.

<sup>2</sup> A : 42 pence.

<sup>3</sup> A : 10 shillings.

<sup>4</sup> A : 2.



## BOLDON BOOK

16 shillings and goes on the bishop's errands and goes on the great hunts with one hunting-dog. Ulkill and Meldred hold 40 acres in like manner and they render 12 shillings and 6 pence and go on errands. Orm holds in 1 assart 8½ acres and renders 2 shillings. The wife of Geoffrey the parson holds 1 toft and 8 acres of the bishop's alms. Four cottiers hold 8 acres and render 4 shillings. The pinder holds 6 acres and has thraves of the vill of Lanchester and renders 40 hens and 300 eggs. The meadows and the cow pasture (*vaccaria*) are in the hands of the bishop. Also 5 bovates of villeinage are waste and likewise 18 acres which were of the demesne. The mills render 8 marks, and every 2 bovates of villeinage find one rope in the great hunt.

CORNSHOWER [Cornsey] and HEDLEY [Hedley], which Simon the chamberlain holds, render 2 marks, and they cart wine with 12 oxen and find 5 ropes for the bishop's great hunt. Robert of Caen renders 12 pence for suit of court at Durham and so he is quit of that suit. [Walter son of Hugh of Caen renders 12 pence for suit of court at Sadberge and so he shall be quit of that suit.]<sup>1</sup>

GRENCROFT [Greencroft] renders 16 shillings and carts wine with 4 oxen and the villeins of the same vill make the twelfth part of the millpond of Lanchester, but the demesne is quit of that service (*inde*) and carts wine with 4 oxen.

IVESTON [Ivestan] renders 2 marks and 1 milch cow and ploughs 1½ acres at Lanchester and is in the great hunt with 3<sup>a</sup> hunting-dogs and carts wine with 8 oxen.

Arnold the baker has CORNESHEUED [Conset] in exchange for Trillesdena [Tursdale] and renders 24 shillings.

Alan of Chilton holds HELEIE [Hedley], as is contained in his charter, for Cornford, which he claimed and which he ought also to defend against all other claimants and he renders half a mark.

The prior of Durham has MUGLYNGWIC [Muggleswick] as is contained in his charter which he has for it, partly of the bishop's gift and grace and partly in exchange for Herdewic [Hardwick].

Alan Bruntoft holds EDMUNDBIRES [Edmundbyers] for his service in the forest, as is contained in the charter which he has for it.

The land of BLAUNCHELAND [Blanchland] which belonged to Alan Marshall renders half a mark.

Robert Corbet holds HUNSTANWORTHIA [Hunstanworth] for his service in the forest, as is contained in the charter which he has for it.

The hospital of St. Giles holds near the bounds of Walter de Bolebec a certain assart and

pasture for feeding swine and cattle for the use of the poor, which the lord bishop gave to them in alms.

MEDOMESLEY [Medomsley] renders 22 shillings.

HOLNESET [Holmside] renders 1 mark and finds 1 man in the forest 40 days in the fawning and rutting season and carts wine with 4 oxen.

Philip son of Hamo holds MIGLEIA<sup>3</sup> [Migley] for his service.

Acto the steward has LANGLEIA [Langley] as well for the service which he rendered to the lord Henry<sup>4</sup> of good memory, bishop of Winchester, as well as that which he rendered to the lord Hugh bishop of Durham; half of this (estate) the same lord bishop bought with his own money and gave to the same Acto with the service of the other half, and he renders for it half a mark.

EDMANSLEY [Edmonsley] renders 32 pence.<sup>5</sup>

Gilbert the chamberlain has the service of Ralf Canute of Bursbred [Bursblades] in exchange for the island of Bradbire [Bradbury] which he ought to warrant to the lord bishop.

In WITTONA [Witton] and FULFORD [Fulforth] there are 24½ bovates which the villeins hold, each is of 8 acres and each renders 2 shillings and 1 hen and 10 eggs, and they plough and harrow 1 day, and they mow the meadows and lift the hay and cart it, and they weed 1 day and reap all the corn and cart it, and in all these works they have a dole. Theobald holds 1 bovat and renders 3 shillings without work. Hugh holds 2 bovates without service, at the bishop's pleasure. The demesne of one plough is in the hand of the bishop. The mill renders 2 marks.

CRUKTONA [Crook] renders 4 marks.

POKERLEIA [Pokerly] renders 2 shillings.

Robert of Rogershall<sup>6</sup> holds the land of Smaleia [Smallees] for 2 shillings freely.

BRITLEIA<sup>7</sup> [Birtley] and TRIBLEIA [Tribley] render 20 shillings and go on the great hunt with two hunting-dogs.<sup>8</sup>

Philip of Gildeford holds REYHERMORE [? Byermoor] by the service of the twentieth part of one knight.

In QUYKHAM [Whickham] there are 30 villeins each one of whom holds 1 bovat of 15 acres and they used to render 16 pence and to work the whole year 3 days in the week and also to

<sup>8</sup> Stowe MS. : Ungeleia.

<sup>4</sup> Henry of Blois helped Pudsey to secure the bishopric of Durham; see Coldingham, ch. ii. in *Scriptores Tres.* p. 5.

<sup>5</sup> A : 22.

<sup>6</sup> A : Cogesalle.

<sup>7</sup> Stowe MS. : Birdeia.

<sup>8</sup> At this point all the MSS. give the following entry : 'Marley renders 1 mark and goes on the great hunt with one hunting-dog, it is quit of other services by the charter of bishop Philip.' As Philip of Poitou, the first bishop bearing that Christian name, sat at Durham, 1197-1208, it is impossible that the passage as it now stands could have formed part of the original survey; cf. App. II.

<sup>1</sup> This passage, which occurs in all MSS., is none the less no part of the original text, for Sadberge was not acquired until after the composition of Boldon Book; vid. App. II. pp. 64-65.

<sup>2</sup> A : 2.

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do 3 boon-days in the autumn with the entire household except the housewife and a fourth boon-day with 2 men and in their work they used to mow the meadows and to lift and cart the hay and to reap all the corn and cart it in like manner in their work, and outside their work to plough for every plough 2 acres of oats and to harrow it and then once to have a dole. And in their work they used to make a house 40 feet in length and 15 feet in breadth and carry loads by horse and cart like the villeins of Boldon, and whenever they reaped the corn and mowed the meadows and did boon-days they used to have a dole. Further they used to render 9 shillings of cornage and 1 milch cow<sup>1</sup> and for every bovat<sup>2</sup> 1 hen and 10 eggs. And in their work they used to make 3 fisheries on the Tyne. The prior of Guisboro'<sup>3</sup> holds 2 bovates and 1 fishery there of the bishop's alms. Gerard the reeve holds 24 acres for his service and those 24 acres used to render 21 shillings. The mill used to render 4 marks, the fishery 3 pounds,<sup>4</sup> and the demesne of 4<sup>4</sup> ploughs was then in the hand of the bishop. But now the aforesaid manor of Whickham is at farm with the demesne and the villeins and the mill and with the stock of 2 ploughs and 2 harrows and 20 chalders of oats by the bishop's measure and with the fishery, and it renders 26 pounds and it does carting from Gatesheued [Gateshead] to Durham and from Gateshead to Bedlyngton [Bedlington], and in the farm 2 pence are reckoned for every horse, and they cart one tun of wine. The pinder of Whickham holds 6 acres and he has thraves like the others and renders 60 hens and 300 eggs. And the 35 villeins render 35 hens and 350 eggs.

The land of SUALWELS [Swallowwells] renders 16 shillings.

William son of Arnold renders 1 mark for a certain assart of 16 acres.

Eudo of Lucelles holds in FARNACRES [Farnacres] 1 carucate of 120 acres for the tenth part of the fee of one knight. Robert de Yolton holds the land which used to belong to the hermit on the Derwent and renders 1 besant or 2 shillings.<sup>5</sup>

<sup>1</sup> Stowe MS. : 'marcam' for 'vaccam.'

<sup>2</sup> A : Brinkburn.

<sup>3</sup> A : 3 marks.

<sup>4</sup> A : 2.

<sup>5</sup> Land of this sort was generally granted from the bishop's demesne, but the nature of the hermit's tenure seems doubtful. The case came up early in the thirteenth century in connexion with the alienation to the prior of Durham of land which a hermit had held by the charter of Bishop Pudsey. A monk testified that the right to alien was in the terms of the gift. The sub-prior, who said that he had seen a papal confirmation of Pudsey's charter, declared that the tenement contained about fifty acres, cut out of the bishop's forest.—*Attestaciones Testium*, etc. in *Historia MSS.* pp. 241, 244, 277, 280, 286, 301.

The men of Ryton hold the vill of RITONA [Ryton] at farm with the demesne and the assize rents and the mill and the services with the stock of 1 plough and 1 harrow and 20 chalders of oats at the bishop's measure and with the fishery, and they render 14 pounds and they carry loads as they of Whickham, and with Craucrok [Craucrook] they carry one tun of wine. The pinder holds 5 acres and has thraves as the others and renders 30 hens and 300 eggs. And the villeins of the same vill 24 hens and 200 eggs.

CRAUCROK [Craucrook] is at farm with the villeins and the demesne<sup>6</sup> with a stock of 1 plough and 1 harrow and renders beyond the assize rents 16½ marks, and renders of assize rents 4½ marks, and 1 milch cow and 14 chalders of malt and the same of flour and the same of oats and 1 castleman, and carts with Ryton one tun of wine.

The son of William the moneyer holds STELYNGLEYE [Stella] according to (*per*) the just bounds which the bishop caused to be perambulated for him, and renders 1 mark for the land which used to belong to Meldred son of Dolfin.

WYNLAKTONA [Winlaton] and BERLEIA [Barlow] are at farm with the demesne and the villeins without stock and they render 15 pounds. They mow the meadows for 2 days, every one with one man and then they have a dole, and they lift the hay and cart it for 1 day. The marsh, meadow, and woodland (*nemus*) are in the hand of the bishop. The mill renders 5½ marks.<sup>7</sup>

SUNDERLAND [Sunderland] is at farm and renders 100 shillings. Roger de Audry renders for the millpond established on the land of Sunderland 1 mark.

WIVESTONA [Weston] is at farm with the demesne and the mill and the villeins and the services with a stock of 2 ploughs and 2 harrows and renders 12 marks.

NEUSOM [Newsham] renders 10 pounds.

BEREFORD [Barford] renders 3 marks. Luke of Barford renders 3 shillings. Aldred Boner of the same vill renders 2 shillings of rent and 7 pence of cornage.

MAGNA USEWORTH [Great Usworth] renders 30 shillings of cornage and 1 milch cow and 1 castleman and 8 scotchalders of malt and the same of meal and the same of oats; and every plough-land, except the demesne, ploughs and

Tenure of this sort would seem to have been a mode of alms. The tenant had the obligation 'pro se et universis Christi fidelibus preces effundere.' In France many towns maintained a sort of professional hermit, and the position seems to have been much sought after. See Ch. Boudet, *Documents inédits sur les Recluseries au Moyen Âge*; Aurillac, 1902 (Extrait de la Revue de la Haute Auvergne) and Bibliothèque de l'École des Chartes, lxi. 384-386. (May-Aug. 1903).

<sup>6</sup> A. adds—and the mill.

<sup>7</sup> Stowe MS. omits.



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harrows 2 acres. And the villeins do 4 boon-days in the autumn, every boon-day with 26 men, and those services which they used to do at Wessyngtona [Washington] they now do at Gateshead, and they carry one tun of wine and a millstone to Durham. The dreng keeps a dog and a horse and goes on the great hunt with 2 hunting-dogs and 5 ropes and does suit of court and goes on errands. The mill of the same vill renders 10 shillings.

Two parts of HERINGTONA [Herrington] which Hugh of Hermas holds render 20 shillings of cornage and two parts of a milch cow and two parts of one castleman and 8 scotchalders as well of malt as of meal and oats, and they plough and harrow 4 acres at Newbottle and they do boondays with 12 men in the autumn. The dreng keeps a dog and a horse, as far as is incumbent on two parts of a drengage, and goes on the great hunt with two parts of two hunting-dogs and carts two parts of a tun of wine and does suit of court and goes on errands.

HOTONA [Hutton] renders 35 shillings of cornage and 1 milch cow and 1 castleman and 8 scotchalders of malt and the same of meal and the same of oats. Richard and Utred plough and harrow 2 acres at Shotton, and every plough of the vill ploughs and harrows 2 acres. The villeins do 4 boondays in the autumn with 1 man for every bovat. The dreng keeps a dog and a horse and carts one tun of wine and a millstone to Durham and goes on the great hunt with 2 hunting-dogs and 5 ropes and does suit of court and goes on errands.

HOLOME<sup>1</sup> [Holam] renders 20 shillings and carts wine with 6 oxen.

John holds the half of SHURUTONA [Sheraton] for 3 marks and is quit of the works and services which used to be done for the half of that drengage for Craucrok [Craucrook] which he quit claimed.

Thomas holds the other half of SHURUTONA [Sheraton] and renders 30 shillings of cornage and the half of a milch cow and the half of a castleman and 4 scotchalders of malt and the same of meal and the same of oats. And every plough of the villeins ploughs and harrows 2 acres, and every one of them does 3 boon-days in the autumn with 1 man, and carries a half tun of wine and a millstone to Durham. The dreng keeps a dog and a horse, as far as is incumbent on the half of a drengage, and goes on the great hunt with 1 hunting-dog and 2½ ropes and 2 men and does suit of court and goes on errands.

In STOKTONA [Stockton] there are eleven villeins and a half, every one of whom holds 2 bovates and renders and works as they of Boldon, except cornage. In the same vill 6 firmars hold 9 bovates, and they render and work as they of Norton. Adam son of Walter holds 1 carucate

and 1 bovat of land for 1 mark. Robert of Cambois<sup>3</sup> holds 4 bovates for half a mark, and 1 bovat of the bishop's loan (*accomodatione*), and is quit of works while he is in the service of the bishop, still if he shall be out of it he will work as much as pertains to the half carucate of Walter. The same Robert has the old toft of the hall near his house and renders thence 16 pence. Edwin and Robert, cottiers, render for 2 tofts 12 pence. Godwin the cottier 6 pence. Simon<sup>3</sup> the smith, for 1 toft, 4 pence. The pinder holds 6 acres, and has thraves of Stockton and Herteburna [Hertburn] and Prestona [Preston] like the others, and renders 180 hens and 500 eggs. The ferry renders 20 pence. The whole vill renders 1 milch cow. One bovat of land which the bishop has beyond the Tees over against the hall renders 4 shillings.

In PRESTONA [Preston] there are 7 villeins, every one of whom holds 2 bovates, and they render and work as they of Boldon, except cornage. In the same vill Waldwin holds 1 carucate. Adam son of Walter of Stockton, holds 1 carucate for 10s. and no more (*tantum*), Orm son of Coket and William son of Utting 1 carucate, Richard Rund holds half a carucate, and they render and work in all ways as Alan of Normanton and Walter of Stockton. The whole vill renders 1 milch cow.

In HERTEBURNE [Hertburn] there are twelve and a half villeins, of whom every one holds 2 bovates and renders and works as the villeins of Boldon, except cornage. Alan son of Osbert holds 1 bovat, and renders and works as one of the 20 firmars of Norton, as much as belongs to 1 bovat. Two cottiers hold tofts and crofts and 24 acres in the fields, and they render and work as the cottiers of Norton.<sup>4</sup> The whole vill renders 1 milch cow. The demesne of Stockton and Hertburn of 10 ploughs with the meadows are at farm, and they render 200 chalders of wheat. The pastures with the sheep are in the hand of the bishop.

In CARLTONA [Carlton] there are 23 firmars who hold 46 bovates and render for every 2 bovates 10 shillings, and they find for every 2 bovates a cart for carrying corn or hay for 6 days, and they do 4 boon-days in the autumn with the entire household except the housewife, and they render for every 2 bovates 2 hens and 20 eggs. Gerobod holds 4 bovates in the same vill, and renders 20 shillings, and is quit of works while he is in the service of the bishop; if, however, he be out of it he shall work like the aforesaid firmars at the will of the bishop. Ellis holds 2 bovates, to be assigned to another when the bishop wills, and renders 10 shillings. Walter the miller holds 2 bovates and renders 10 shillings, and 2 shillings for his services. Suma, a

<sup>3</sup> A : William de Tumba.

<sup>3</sup> A : Suane.

<sup>4</sup> A reads—Three cottiers hold tofts only and work 14 days in autumn.

<sup>1</sup> Stowe MS. : Bolum.

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widow, holds 2 bovates, and is quit of rent and all services in her life-time, and after her death they shall return to the demesne of the bishop. William son of Ornix<sup>1</sup> holds 1 carucate and renders 10 shillings, and is quit of all other services except that he comes to the great hunt of the lord bishop with 1 hunting-dog. The mill renders 20 baskets (*sceppas*) of wheat at the measure of Jarum.<sup>2</sup>

Walter de Roth holds GRENDONA [Grendon] which the bishop bought and gave to him, for his service, and renders thence 3 besants a year and is quit of all other services.

In NOVA RIKENHALL [New Ricknall] there are 11 villeins, every one of whom holds 1 bovat of 20<sup>3</sup> acres, and they work 3 days in the week from Lammass to Martinmas, and contrariwise 2 days in the week, and they do 4 boon-days in the autumn, and every man renders 2 hens and 20 eggs. The demesne of the other Ricknall of 4 ploughs with the meadows and pastures and sheep is in the hand of the bishop.

Gilbert holds HEWORTH [Heworth] for 3 marks, and is quit of the ancient works and services, which he used to do for it as of thegnage, for Ricknall which he quitclaimed.

In DERLINGTONA [Darlington] there are 48 bovates as well of old villeinage as of new, which the villeins hold, and they render for every bovat 5 shillings, and they ought to mow the whole of the bishop's meadow and to make and carry the hay and to have a dole once and to enclose the copse and the court, and to do the services at the mill which they used to do, and (to carry) for every bovat 1 cartload of wood, and to do carrying-service (*facere ladas*) on the bishop's journeys, and moreover 3 carrying services a year for carrying wine and herrings and salt. There are 12 firmars there who hold 12 bovates, and render rent as the villeins, but they neither work nor go on the bishop's errands. Osbert Rate<sup>4</sup> holds 2 bovates and renders 32 pence, and goes on errands. The son of Wibert holds 2 bovates, for which William used to render 8 shillings, and now he renders for the same, with the addition of 4 acres, 10 shillings and goes on errands. Odo holds 1 toft of 23 acres of cultivated land, where mast (*fagina*) was sown, and renders 10 shillings only, and in another part 16½ acres, and of these he renders 10 shillings until Robert son of William de Mowbray, who is in his wardship, be of age. Gaufoie<sup>5</sup> 20 acres for 40 pence, and goes on the bishop's errands. Eugeliamus son of Robert Marshall<sup>6</sup> 6 acres for 12 pence. In like manner the smith holds 8 acres for the iron gear of the

ploughs of Halton and for the small iron work in the court of Darlington. Four cottiers render 3 shillings<sup>7</sup> for their tofts. The pinder holds 9 acres and has thraves as the others, and renders 100 hens and 500 eggs. The rent of the borough is 5 pounds, of the dyers of cloth half a mark.<sup>8</sup> The mills of Darlington, Halutona [Haughton], and Kettona [Ketton] render 30 marks.

In BLAKWELLA [Blackwell] there are 46<sup>9</sup> bovates, which the villeins hold, and they render and work in all ways as the villeins of Darlington. Five firmars hold 4 bovates, and they render and do service as the firmars of Darlington. Thomas son of Robert holds 1 bovat and renders 40 pence. Four acres which belonged to John Russ<sup>10</sup> render 16 pence. Adam son of Ralf, of Stapleton, holds 4 bovates and 1 culture of 16 acres and 3 rods, and renders 5 shillings and 4 pence, and he shall have charge of the boon-days and go on the bishop's errands. And the same Adam renders for the herbage of Bathela [Batheles] 32 pence. Seven cottiers render 3 shillings and 10 pence.<sup>11</sup> Robert Blount for 1 little (piece of) land by the Tees 6 pence. Hugh Punder for 1 acre 12 pence, and 1 toft of waste.

In COKIRTONA [Cokerton] there are 47 bovates which the villeins hold, and they render and work in all ways as the villeins of Darlington. Four firmars hold 3½ bovates, and they render and do services as the firmars of Darlington. Six cottiers render 3 shillings and 10 pence, and they work in all ways as they of Blackwell.

William holds OXENHALL [Oxenhall], namely 1 carucate and 2 cultures of the land of Darlington which Osbert of Selby used to hold at farm, in exchange for 2 carucates of the land of Ketton which his father and he used to hold in drengage, which he quitclaimed for ever to the bishop and his successors from him and his heirs. He ought to have a horse-mill, and he and his land are quit of multure and the service of the mill and he renders 60 shillings a year. Moreover he does the fourth part of a drengage, that is that he ploughs 4 acres and sows them with the bishop's seed, and harrows and does 4 boon-days in the autumn, namely with all his men with the entire household, except the housewife, and a fourth with 1 man from every house, except his own house which shall be quit, and he keeps a dog and a horse for the fourth part of a year, and he carts wine with 4 oxen, and does *utware* when it is appointed in the bishopric.

<sup>7</sup> A. adds—and help to stack hay, and carry fruit and work at the mill.

<sup>8</sup> A. reads—The borough, dyers and bakehouses render 10 marks.

<sup>9</sup> A : 47.

<sup>10</sup> A : Rufus.

<sup>11</sup> A : 5 shillings, and help to stack hay, and carry fruit and work at the mill.

<sup>1</sup> A : William son of Orm.

<sup>2</sup> Unless we are to read Jarrow, I cannot explain this.

<sup>3</sup> A : 9.

<sup>4</sup> A : Rate.

<sup>5</sup> A : Geoffrey Joie.

<sup>6</sup> A : Lambert.



In PARVA HALGHTONA [Little Haughton] there are 5 men who hold 8 acres, and at the same time each one a toft and a croft, and they render 5 shillings and 6 pence, and in another part they render for 40 acres 1 mark.

Adam of Selby holds at farm the demesne of the same place with the stock of 2 ploughs and 2 harrows and with sown acres, as is contained in his indenture, with the grange and court and close, and renders 8 marks, and he should find litter for the lord bishop on his journeys to Darlington, and moreover he keeps the houses and the court of the lord bishop at Darlington, and those things that are affeered there, at his own expense, in return for a certain piece of arable land which is called Hacdale, which he holds in the field of Darlington over against the hall on the east side beyond the water. The pasture with the sheep is in the hand of the bishop, but Adam, if he wish, may have in that pasture 100 sheep so long as he holds the aforesaid farm. The mill of Burdon, for the damming of the pond which is dammed on the land of Halctona [Haughton], 12 shillings.

In GREAT HALGHTONA [Haughton] there are 9 bovates which the villeins hold and they render for every bovat 12 shillings of rent, and they hoe corn 4 days for every bovat with 1 man and they mow the meadows 2 days for every bovat with 1 man and they cart hay 1 day with 1 cart for every bovat and in like manner corn, and they work from Lammas to Martinmas 2 days in 1 week with one man for every bovat, and another week 1 day with 1 man and they do 4 boon-days in the autumn and every bovat ploughs and harrows half an acre and harrows moreover 1 day with 1 man and threshes half a chalder of wheat and carts 1 cartload of wood and carries loads with horses; in this manner they render and work until the bishop wishes to appoint them otherwise. Gilbert holds 40 acres for 2 shillings in exchange for the land which his father held in drengage in the same vill which he quitclaimed for the aforesaid 40 acres and for 4 marks which the bishop gave to him, and he ought to have charge of the boondays and to go on errands. The son of Aldred holds 40 acres there in like manner for 2 shillings for the land which his father held in drengage in the same vill which he quitclaimed to the bishop for the aforesaid 40 acres to be held just as freely, and for 4 marks which the bishop gave him on this account and in like manner he has charge of the boondays and goes on errands. Richard Dune holds 37 acres of cleared land and renders in the first year 4s. The wife of Aldred holds 3 acres of the bishop's alms. Walter son of Sigge holds 2 bovates of 36 acres for 12 shillings only, at the bishop's pleasure. There are 9 cottiers there, every one of whom renders 6 pence and works 9 days and does 4 boondays in the autumn, and they lift hay. Two tofts are in the hand of the

bishop. Benedict<sup>1</sup> of Haughton holds the demesne at farm with a stock of 4 ploughs and 4 harrows and with sown acres as is contained in his indenture, and with the grange and byre (*bovaria*), court, and close, and renders 20 marks.

In WESSAWE [Whessoe] there are 14 bovates, and every bovat renders 12 pence and works 1 day in every week in the year, and moreover they mow the meadows three days and they do 4 boon-days in the autumn with the entire household except the housewife, and every plough ploughs and harrows 1½ acres and every bovat carries 1 cartload of wood and they carry loads with horses. Tuke holds 2 bovates and renders 8 shillings, and does 4 boon-days with the entire household except the housewife and goes on errands. Orm, his brother, holds 2 bovates and renders 5 shillings, and does 4 boon-days like Tuke, and works 13 days in the autumn and goes on errands. Robert son of Meldred holds 1 carucate, and renders 10 shillings and 6 pence and does 4 boon-days with all his men except his own household, and he or some one in his place will be over the boon-works; and his men plough and harrow 1½ acres, and Robert himself keeps a dog and a horse and does *utware* as much as pertains to the fourth part of one drengage and finds 4 oxen to bring wine. A certain widow holds 1 toft and croft and renders 6 pence and works 8 days and does 4 boondays.

Thomas de Hovyngham<sup>2</sup> holds the demesne of KETTONA [Ketton] at farm with the stock of 4 ploughs and 4 harrows and with sown acres as is contained in his indenture, and with the grange and byre and other buildings which are in the court which is enclosed with a ditch and hedge, and he renders 20 marks.

In HEGHYNGTONA [Heighington] there are 16 villeins, each of whom holds 2 bovates and renders 10 scotchalders of malt, and the same of meal, and the same of oats, and 63 chalders of oat-malt (*avermalt*) by the measure of the hall of Heighington, and 8 cartloads of wood, and 32 hens, and 1,000 eggs, and 36 shillings of cornage, and 1 milch cow, and 1 castleman. Two cottiers each hold 15 acres and work through the whole year 2 days in the week [and give with the villeins their share of the common fine (*scat*) and of the milch cow (*metride*) and of *yolwayting*].<sup>3</sup> Three other cottiers hold 4 acres apiece and work 2 days in the week from Lammas to Martinmas and contrariwise 1 day in winter. The villeins and cottiers hoe all the bishop's corn of the same vill, and every week in the autumn they find for every bovat 1 man to mow and reap 1 day, and they do 4 boon-days with their whole household except the housewife, and then they have a dole. Moreover every villein ploughs and harrows half an acre of oat stubble (*averere*)

<sup>1</sup> A : Walter.

<sup>2</sup> Adam de Helmede.

<sup>3</sup> The portion in brackets is found only in A.

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and for every plough of the villeins they plough and harrow 1 acre and then they have a dole, and they do 1 boon-work 1 day with all the harrows of the vill. Sixteen of the aforesaid villeins render 16 shillings of *miclhemeth* and 6 shillings of *volwayting*. The reeve holds 2 bovates for his service, and when he lays down (his office) he shall render like the other villeins. Thomas the clerk holds 4 bovates for half a mark, and does 3 boon-works and goes on the bishop's errands. Hugh Brunne holds, as long as his wife lives, 2 bovates for 2 shillings, which he gives toward cornage, and he does 3 boon-works and goes on errands. 1 toft renders 6 pence. The mills of Heighingtonshire render 8<sup>1</sup> marks. The pinder holds 6 acres and has thraves like the others and renders 80 hens and 500 eggs.

The demesne is at farm with the stock of 3½ ploughs and 3½ harrows and renders for 2 ploughs 16 chalders of wheat and 16 chalders of oats and 8 chalders of barley and for 1½ ploughs 5 pounds.

All the villeins of Heighingtonshire with the cottiers mow the bishop's meadows and cart the hay and enclose the court and orchard (*virgultum*) of Heighington. Moreover the villeins carry loads of corn from the demesne wherever the bishop wishes between Tees and Wear, and every man finds 1 rope for the bishop's great hunt, and the bishop himself from his hall at Heighington 15 ropes. Simon the doorward holds there the land which belonged to Utrud with the increase which the lord bishop made to him up to 60 acres and renders for all 1 besant at Whitsunday.

In KILLIRBY [Killerby] there are 14<sup>3</sup> villeins and every one of them holds 2 bovates and they render 10½<sup>3</sup> scotchalders of malt, and as many of meal and as many of oats and 56<sup>4</sup> chalders of oat-malt (*avermalt*) by the measure of the hall of Heighington and 7<sup>5</sup> loads of wood and 28<sup>6</sup> hens and 1,000<sup>7</sup> eggs and 37 shillings and 6 pence of cornage and 1 milch cow and 1 castleman, and 14<sup>8</sup> shillings of *miclhemeth* and 5 shillings of *volwayting* and they work in all ways like the villeins of Heighington. Two cottiers render for 2 tofts and crofts 12<sup>9</sup> pence and they work 6 days in the autumn. Simon the doorward holds the demesne for 4 marks.<sup>10</sup>

In MIDRIGE [Middridge] there are 15 villeins and every one of them holds 2 bovates and they render 8 scotchalders of malt and the same of meal and the same of oats, and 40 chalders of oat-malt by the measure of the hall, and 7½ cart-loads of wood and 30 hens and 1,000 eggs, and 3 marks of cornage and 1 milch cow and

1 castleman, and 15 shillings of *miclhemeth* and 5 shillings of *volwayting*, and they work in all ways as they of Heighington. A certain<sup>11</sup> cottier has 1 bovat and works 2 days in the week through the whole year.<sup>12</sup> And 3 cottiers hold every man 4 acres and work as they of Heighington. Wekeman holds half a carucate and renders 6 shillings and does 3 boon-works and ploughs and harrows 1 day and mows 1 day and carts hay and corn 2 days and superintends the boon-works and goes on the bishop's errands. Anketill holds 2 bovates and renders 3 shillings and does 3<sup>13</sup> boon-works and superintends the boon-works and ploughs and harrows 1 day and mows 1 day and carts hay and corn 2 days and gives his share of scot and castlemen with the villeins, and goes on the bishop's errands.

In THICKLEY [Thickley] there are 8 villeins, and each one of them holds 2 bovates and renders 4 scotchalders of malt and the same of meal and the same of oats and 32 chalders of oat-malt at the measure of the hall, and 4 loads of wood and 16 hens and 1,000<sup>14</sup> eggs; and 16 shillings of cornage and half a milch cow and the half of one castleman and 8 shillings of *miclhemeth* and 32 pence of *volwayting* and they work in all ways as they of Heighington. A certain<sup>15</sup> cottier renders 4 pence and works 6 days in the autumn. A certain woman<sup>16</sup> holds 3 acres for 6 pence.

The demesne of Middridge and Thickley with the stock of 4 ploughs with the pastures of Flakkesdon<sup>17</sup> and Redworth and with the sheep is in the hand of the lord bishop.

Guy of Redworth holds a new vill near Thickley in exchange for Redworth and renders 1 mark and finds 12 men 1 day or 1 man 12 days in the autumn for mowing and ploughs 1 day and works at the milldam and goes on the bishop's errands, and carts wine with 4 oxen.

In REDWORTH [Redworth] 16 firmars hold 16 bovates, and they render for every 2 bovates 5 shillings and 2 hens, and for every bovat they do 3 boon-works in the autumn with 1 man and they reap 1 day with 8 men and they cart hay 1 day with 8 carts and they plough one day. Three cottiers hold 12 acres, and in every week every man works from Lammas to Martinmas 2 days in the week and contrariwise 1 day.

SCULACLE [School Aycliffe] renders 11 marks.

OLD THICKLEY [Old Thickley] which was made of the land of Redworth renders 1 mark of cornage at the feast of S. Cuthbert in September.

In NORTH ALCLAND [North Aukland] there are 12 villeins, of whom every one holds 1 bovat and renders 2 chalders of oat malt and 1

<sup>1</sup> A : 12.                      <sup>2</sup> A : 12.                      <sup>8</sup> A : 8½.

<sup>4</sup> A : 48.                      <sup>6</sup> A : 6.                      <sup>10</sup> A : 24.

<sup>7</sup> A : 'nulla' for 'mille.'

<sup>9</sup> A : 12.                      <sup>12</sup> A : 18.

<sup>10</sup> A : holds 1 carucate of land for the service of the twelfth part of a knight's fee.

<sup>11</sup> A : Ulkil.

<sup>12</sup> A adds : and gives his share of scot with the villeins.

<sup>13</sup> A : 4.

<sup>14</sup> A : 'nulla ova.'

<sup>15</sup> A : Aik.

<sup>16</sup> A : John.

<sup>17</sup> A : Sakesdon.



wehit<sup>1</sup> of scot-malt and one wehit of scot-meal (*scatfarin*) and 8 pence of averpenny and 19 pence of cornage and 1 hen and 20 eggs and 3 wagonloads of wood if they cart it to Aukland, but if to Durham 2½ wagonloads, and they work from Lammass to Martinmas 2 days in the week and contrariwise 1 day in the week. Moreover he does 4 boon-works in the autumn with the entire household except the housewife. And every plough of the vill ploughs and harrows 2½ acres beyond the services. The whole vill renders 1 milch cow. The reeve has 1 bovat for his service. Alan the cobbler holds 1 toft and 1 croft, and renders 4 shillings and does 4 boon-works. Simon the miller holds 1 toft and 1 croft, and renders and works like Alan. [William Scott, Elstan and William Boie, for 1½ acres (render) 12 *esperducta* of wheat.]<sup>2</sup> Eustace the pinder holds 20 acres and has thraves like the others, and renders 80 hens and 500

<sup>1</sup> A local measure.

<sup>2</sup> Instead of the phrase in brackets A reads:— 'Monk the cook (*Monachus cocus*) holds for his service at the bishop's will 1½ acres which William Scot and Elstan and William Boie held, and within the park and without 19½ acres of arable (*lucrabilis*) land and 10 acres of land not arable. Humfrey the smith holds 1 bovat for his service.'

eggs. The toll of beer renders half a mark. The mills of Auklandshire 24 marks. [Pollard holds 10½ acres. Luce Makerell holds 1 house near by the lord bishop's orchard, and renders on the feast of S. Cuthbert half a pound of cummin. Gatul the smith holds 16 acres for 1 pound of pepper, and his heirs (shall hold them) for 2 shillings or 2 swine (worth) 2 shillings.]<sup>3</sup>

In ESCUMBA [Escumbe] there are 13 villeins of whom each one holds and has 1 bovat, and renders and works in all ways like the villeins of North Aukland. A certain collier (*carbonarius*) holds 1 toft and 1 croft and 4 acres, and finds coals for the ironwork of the ploughs of Coundon. Elabrid holds half a bovat and renders 8 pence of ferm and 9 pence of cornage and does 4 boon-works and goes on the bishop's errands and the roehunt (*rabunt*). Ulf Raning holds 5 acres, and renders 4 shillings and does 4 boon-works.<sup>4</sup> Alan Picunderake holds 1 toft and 1 croft and 3 acres, and renders 24 hens and 300 eggs and does 3 boon-works.

In NEWTONA [Newton] there are 13 villeins who hold, render and work in all ways as they of Aukland.

<sup>3</sup> This is found only in A.

<sup>4</sup> A: Humfrey the carter holds 6 acres which were Ulf Raning's, and renders 12d. yearly.

















# ANCIENT EARTHWORKS

## INTRODUCTION

Notwithstanding that much attention has in recent years been devoted to the study of ancient earthworks and defensive enclosures in Britain, it is impossible to classify them in perfect chronological order ; nor is there any hope of accomplishing this desirable end until careful and scientific exploration is made and properly recorded.

Certain works can, however, be assigned to more or less definite periods ; for example, fortresses which have yielded evidence of construction by men of the stone age when the use of metal implements was unknown ; enclosures proved to be of the age when bronze had largely supplanted stone as the material for making weapons of war and implements for everyday use ; camps in the ramparts of which have been found proofs that men had learned something of the use of the great civilising agent—iron ; and passing to the historic period, Roman stations and mediæval strongholds ; but the gaps are wide, the story overlaps, and in the majority of cases we must wait the result of adequate examination with pick and shovel.

Recognizing our limitations, it is preferable to adopt the Scheme<sup>1</sup> published by the Congress of Archæological Societies, and classify the defensive enclosures of a district by form rather than to attempt a strict chronological order, bearing in mind the recognized exceptions to which reference has just been made.

A.—At many points on the coast line of Britain are found promontory fortresses constructed either by landing parties of enemies as bases for offensive warfare, or by the inhabitants as defensive shelters to check invaders and protect themselves. Whence arises the fact that Durham yields no such coast examples ? Owing to the nature of the rocks forming the coast, erosion is not likely to have been sufficient to destroy any defensive works on the cliff summits, and we must look for a different reason for their absence. Two large rivers pour their waters into the sea—the Tyne on the north, the Tees on the south, while the Wear has a lesser but still considerable debouchment.

<sup>1</sup> The following classification is recommended in the Scheme and its Appendix :—

- A. Fortresses partly inaccessible, by reason of precipices, cliffs, or water, additionally defended by artificial works, usually known as promontory fortresses.
- B. Fortresses on hill-tops with artificial defences, following the natural line of the hill ; or, though usually on high ground, less dependent on natural slopes for protection.
- C. Rectangular or other simple enclosures, including forts and towns of the Romano-British period.
- D. Forts consisting only of a mount with encircling ditch or fosse.
- E. Fortified mounts, either artificial or partly natural, with traces of an attached court or bailey, or of two or more such courts.
- F. Homestead moats, such as abound in some lowland districts, consisting of simple enclosures formed into artificial islands by water moats.
- G. Enclosures, mostly rectangular, partaking of the form of F, but protected by stronger defensive works, ramparts and fossed, and in some instances provided with outworks.
- H. Ancient village sites protected by walls, ramparts, or fosses.
- X. Defensive works which fall under none of these headings.

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Why then do we not find at these points traces of promontory, or indeed any pre-Roman fortresses? The answer may be that in those early times few enemies came by water to this northern region of tempestuous seas, while the bare coast and wild uncultivated hinterland offered little incentive to invasion by land or sea—a fact which may also account for the absence of early promontory forts on the hills throughout the county. We find but two examples of this class of defensive enclosure—one, Maiden Castle, near the city of Durham, which is probably little, if any, earlier than the time of the Roman occupation, and a hardly known enclosure in Brancepeth parish.<sup>1</sup>

B.—The next class in the Scheme consists mostly of hill fortresses or camps. It is scarcely too much to say that no county in England possesses in an equal area so few examples of this class, and there is hardly another region in Britain so absolutely without a fortress as is the case in many square miles of fells and moorland on the west side of the county.

Canon Greenwell remarks on the equal absence of memorials of the dead, as of the living, in all that great tract of high ground, which, under similar circumstances elsewhere in England, would be occupied by the cairns and barrows of the people.<sup>2</sup>

The constructors of great hill-fortresses elsewhere were mainly men of the neolithic or later stone age, or of the late Celtic or early iron age; some however were of the bronze period. Why no neolithic men fixed their great camps of refuge or fortresses here, we know not, and cannot but assume their absence in force from the district, an assumption justified by the almost total absence of relics of neolithic men among the discoveries from burial mounds and otherwise in Durham.<sup>3</sup> The bronze age, which succeeded the stone age, has yielded interesting relics; but we have no evidence that any defensive earthworks here, either large or small, belong to that period, though a recent 'find' of that age was unearthed in a tumulus not far from the enclosure at Brancepeth to which reference has been made.

It is more interesting to enquire why there are no large hill-camps of the late Celtic period—the great fortress-rearing age, the birth-time of a vast number of the finest hill-camps in England? The answer may be that, instead of being a border land in need of defence from inroads, or occupied by rival tribes needing defence from each other, this land was in possession of the Brigantes, a powerful tribe whose territory stretched north, west and south of Durham, leaving it central and safe. It is true that palisaded or stone-walled enclosures, probably small in size, would have been necessary to protect cattle from wolves and other wild beasts in early days, but wooden palisades and stone walls easily disappear in the course of ages. Some of the small enclosures which are met with may once have been cattle shelters furnished with palisades on their earthen walls, but probably so wild and little occupied was this land, even in late Celtic days, that few such shelters existed.

A small number of lesser works than the great hill fortresses, but belonging to class B, were constructed in the county; Shackerton near

<sup>1</sup> Since the above was written Mr. Edward Wooler has drawn public attention to this interesting earthwork.

<sup>2</sup> Greenwell, *British Barrows*, 1877, p. 440.

<sup>3</sup> See article on Early Man in Durham.



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Redworth, Toft Hill, near Evenwood, The Castles, North Bedburn, and perhaps Rowley Castle Steads, are or were the principal examples.

C.—Though many rectangularly formed camps are of Celtic origin, the most interesting are those of the Roman period—the period which brings us into touch with history. Some few hundred years ago an observer could have seen in this county some fine examples of Roman castrametation, but little is left now of three out of the four stations which guarded the Watling Street; Piercebridge, Binchester, and Ebchester show little evidence of Roman occupation, but happily more has been spared at Lanchester. For traces of the imperial rulers at Chester-le-Street and South Shields one must look under, rather than above, ground. Poor as are the remains, except at Lanchester, much might be said of these Roman stations, but it will be better deferred to the chapter on the Roman Remains.

Were we attempting chronological sequence it would be necessary to dwell upon the great gap in our island story, as told by its earthworks, in the period following the departure of the Roman legions. Angle and Dane have left no fortress-evidence in this county, for though tradition styles some works ‘Danish,’ such attribution was probably due to the natural habit of calling a mysterious place of unknown age by the name of the last known enemy when not by that of the arch enemy of all mankind! It is an open question whether many ‘homestead moats’ are not the sites of early Angle house-places, but, leaving them for the moment, we pass to the interesting series of strongholds classed as

D and E.—Artificial, or partly artificial, defensive mounts, with fosses around them, abound in England, most being provided with one or more courts or baileys attached to them. Much discussion has arisen as to their date, but a majority of the archæological world is inclined to accept the theory of Norman origin, though some of these works appear to have existed in the time of Edward the Confessor, and fossed mounts without courts may be possibly earlier. It must not be forgotten that when first thrown up, these high mounts of earth were necessarily incapable of sustaining the weight of stone structures, and must therefore have been dependent upon wooden defences such as are shown on the Bayeux tapestry. Durham Castle, Barnard Castle, and possibly others were originally of this type, but by far the most striking example of such an earthwork is that at Bishopton, where the great mount, artificially raised some 38 to 40 feet, is the principal feature remaining of the castle of Roger Conyers, Constable of Durham in the twelfth century.<sup>1</sup>

F.—Homestead moats were usually constructed by the simple expedient of digging a surrounding wide fosse, or ditch, and throwing the material inwards, thus raising the island, or enclosed space, above the level of the adjacent land; occasionally we find the earth piled up on the inner verge of the fosse to form an additional defence against foes. Some of these enclosures are divided by ditches or water moats into two or more islands; but for these, as for the more simple forms, we must look more to the rich pasture-lands of England, which are not a prevailing characteristic of the county of Durham. Here we notice but few true homestead moats, a fact which, *assuming the correctness* of the attribution of the origin of such

<sup>1</sup> Of class D (simple mount forts with fosse) we do not find a reliable example in the county.

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works to Anglian days,<sup>1</sup> confirms the evidence of the place-names of the county which points to little early occupation. Among the simple homestead moats of Durham may be mentioned High Shipley, Holmside Hall, Bradley Hall, and Butterby.

G.—Many of these more complex, moated, and ramparted enclosures were the sites of defended houses or castles in mediæval days, and their comparative abundance in proportion to earlier forms is noteworthy. Even such massive stone structures as Raby Castle depended to a large extent upon a deep and wide surrounding moat for protection. Castle works, such as the hardly-traceable remains at Stockton, those at Witton and others, show the same reliance on moats for defence. The works at Middle Friarside, Chester le Street, form a typical example of this class of earthwork, and Low Dinsdale was probably another, though on a much larger scale.

H.—Of village sites protected by walls, ramparts, or fosses, we find few in the county; probably Archdeacon Newton was one, and Low Throston, in the parish of Hart, may have been another, but the most interesting is that much obliterated, defended site of a supposed Anglian village near Castle Eden.

X.—Because there is much doubt as to their origin, rather than that their form is uncommon, we place those curious little ‘camps’ on Cockfield Fell under this head. Their close proximity to one another is sufficiently unusual to warrant classification as works which fall under none of the previous headings. It has been thought that these, and the three little ‘camps’ at Eastgate, near Stanhope, may date only from the time of the thirteenth or fourteenth-century wars between England and Scotland, but this is very doubtful.

The story which the Durham earthworks tell, confirmed as it is by the collateral evidence of ‘finds,’ may be briefly summarized. In neolithic days the district was wild and to a large extent unoccupied; in the bronze age clearings took place here and there providing for a very sparse population, which hardly increased in number in the early-iron period; with the advent of the Romans came their great roads across the desolate land, five or six military stations were built and the legions passed frequently on their way; but there is no evidence of civilizing influences away from the roads, and the country generally remained in a wild condition. The early Anglian cared not for it, and though the late Saxon and Dane settled on parts, probably it was not much populated till the rise of the power of the church, when as the domain of the bishops of Durham it became more and more cleared and settled. Then arose the mount and court feudal strongholds, and probably those works classed under H, as centres of settlements and manors.

### PROMONTORY FORTRESSES

#### [CLASS A]

BRANCEPETH: STOCKLEY BECK.—This nameless enclosure, situated a little to the west of Watling Street, is formed by two streams which join at the apex of a triangle, the base, or third side, being defended by a rampart and fosse, now partly destroyed by a colliery,<sup>2</sup> but originally nearly 900 yards

<sup>1</sup> We are not able to substantiate this attribution, and at present regard it as tentative.

<sup>2</sup> Much of the northern portion, south of the colliery, has now been levelled and ploughed over.



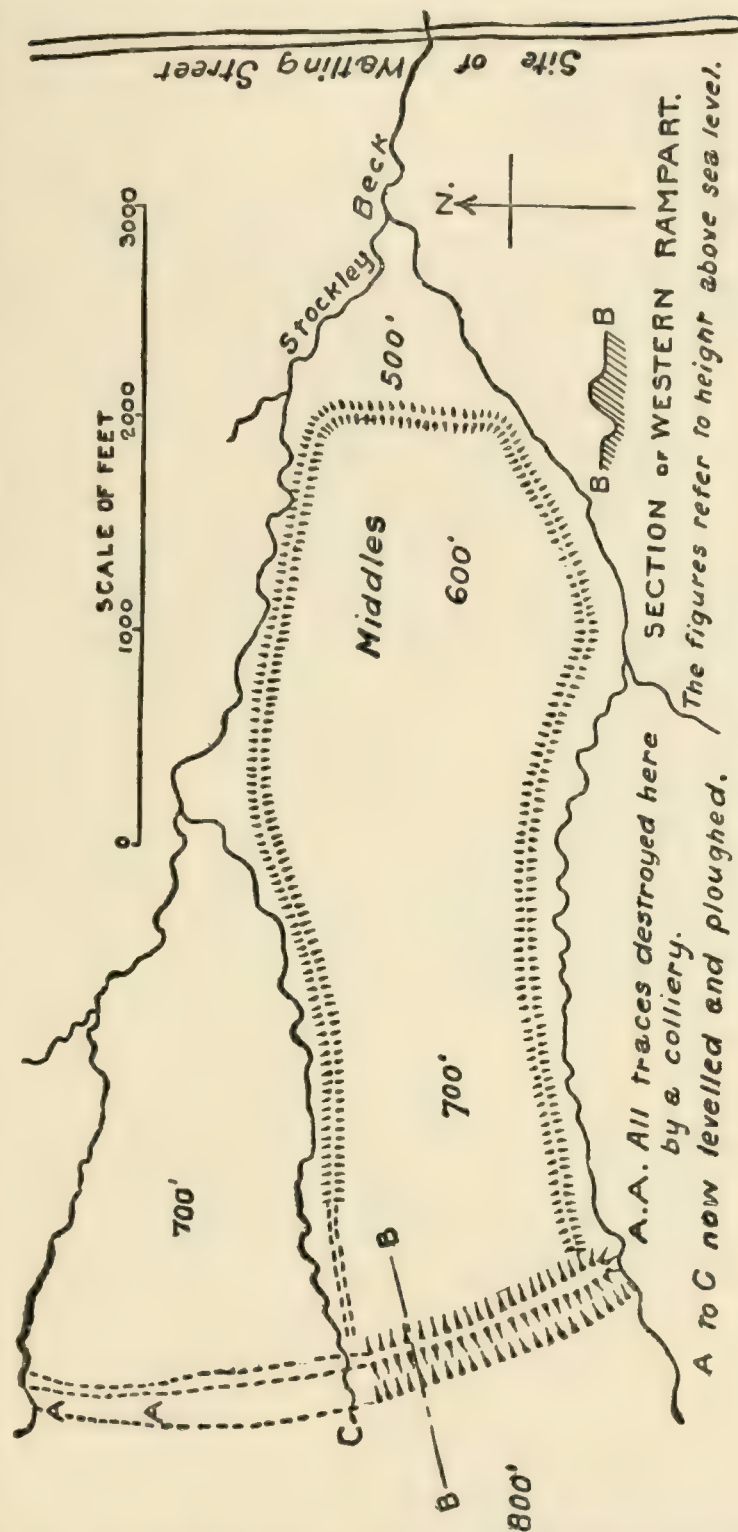
## ANCIENT EARTHWORKS

in length. Though the precipitous banks of the streams formed the main protection on the north and south, there are considerable remains of added banking to which reference will presently be made, but the main artificial work is that on the third, or western, side of the enclosure. It consists of a bank with a fosse on its outer side, the latter about 9 feet wide at the top; the bank, now 11 feet wide at its summit and standing some 6 feet above the fosse, was no doubt originally higher, and when surmounted by a stockade of timber formed a formidable obstacle. The western portion of the 'camp,' if we may so style it, is about 250 feet higher in level than the eastern point to which the ground slopes.

Upon examination of the plan it will be noted that between the streams on the north and south is a third stream. This has also in parts of its course very precipitous banks, and seems to

have been utilized for the northern defence of an enclosure, less in size than the original 'camp,' but more amply protected by artificial work forming an earthwork complete in itself.

There is some doubt as to the purpose of this enclosure; the outside fosse of the western rampart suggests defence against human foes, but Mr. Edward Wooler of Darlington, who has devoted much attention to this place, writes: 'I find in the description of the estate on the forfeiture by

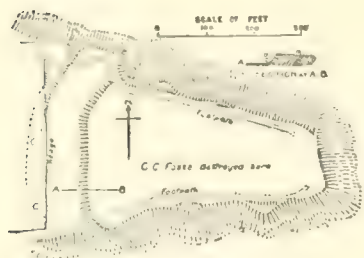


STOCKLEY BECK CAMP, BRANCEPETH.

## A HISTORY OF DURHAM

the Nevilles, East and West Parks referred to, and that they were bounded by a pale, and ditch on the outside 2 yards broad, and that deer and wild cattle were kept in these enclosures. It is therefore possible that the earthworks may have been the West Park (2½ miles from Brancepeth Castle).'<sup>1</sup>

Mr. Wooller's further examinations of the spot lead him to conclude that the enclosure was originally an ancient British stronghold, and indeed the vast amount of labour expended on raising the banks seems to suggest that the work was a defence in very early days; but it is quite probable that the western rampart, extending the whole length on that side, is far older than the other embankments of the southern portion. The latter may have been the work referred to as an enclosure for deer and wild cattle in the sixteenth century, but it seems small for such a purpose. In the absence of the evidence which excavation alone affords, nothing definite can be said as to the age of the southern enclosure, but probably the long western rampart and fosse defended a British fortress of the promontory type. It is curious that though the entrenchment on the western side is shown on one of Maclauchlan's beautiful plates there is no mention of the 'camp' in the accompanying *Memoir*,<sup>2</sup> nor, so far as we can discover, has it been noticed by any previous writers on the antiquities of the county. Though its eastern extremity is within 2,000 feet of the site of Watling Street, it cannot be supposed that its existence had any relation to that great road.



MAIDEN CASTLE, DURHAM.

**DURHAM: MAIDEN CASTLE.**—This is a lofty promontory of great natural strength, to the east of the city, and approached from the west side. The north, south, and east slopes are very steep, especially the last, which rises about 100 feet above the river Wear. On these three sides there are little traces of any artificial defences, but on the west a bank and fosse have been made across

the neck of land by which the position is approached, the fosse, now nearly obliterated, being some 70 to 80 feet west of the bank. The whole site is overgrown with trees, and the area enclosed by the bank and ditch shows no signs of additional earthworks beyond some slight indications of a bank around the site, on the edge of the natural escarpment.

### HILL FORTS, &c.

#### [CLASS B]

**BISHOP AUCKLAND: TOFT HILL.** On the plateau here we find traces of entrenchments, but in so broken a condition that it is difficult to say more than that a fortress of considerable strength once existed. Bailey, writing in 1779, said that one side of the camp was 140 yards in length.<sup>3</sup>

**NORTH BEDBURN: THE CASTLES.** A rectangular enclosure measuring 260 feet north to south by 200 feet east to west, surrounded by a rampart

<sup>1</sup> The forfeiture referred to was the result of the imprudence of Charles Neville, the sixth earl, in joining the 'Rising of the North' in 1569.

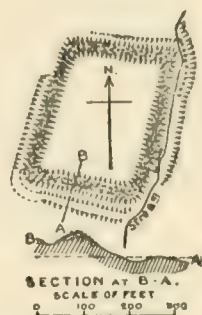
<sup>2</sup> Maclauchlan, *Survey of the Watling Street*, 1852.

<sup>3</sup> *Antiq. Repertory*, iii. 1780.



## ANCIENT EARTHWORKS

of water-worn boulders, with a ditch on the north and south sides, and a small stream on the east. The site falls quickly towards the south, being on the north slope of the narrow valley down which runs the Harthope Burn, the southern rampart of the enclosure being some 120 yards from the burn. The whole area is overgrown with gorse and brushwood, but the rampart remains to some height at all points except the north-west angle. The boulders are heaped together and lie at a natural angle, the rampart being in places 33 feet wide from inside to outside, and varying in height from 18 feet above the bottom of the ditch on the south to between 4 feet and 5 feet on the north and west. Near the south-east angle are to be seen in several places parts of a dry wall of small thin stones which appears to form a core to the heap of boulders, but may be a later addition. On the east side, towards the small stream before mentioned, there is a secondary outer rampart of stones, and the further bank of the stream is in places faced with rough stones. This is particularly noticeable at the north-east angle, where the bank is some 10 feet high. The ditch outside the south rampart is 30 feet wide from bank to bank, but in its present condition is too shallow to be of any defensive value. Those on the north and west are insignificant. The position is not a strong one, being completely commanded by the rising ground to the north, but is well supplied with water and sheltered from the north and east.

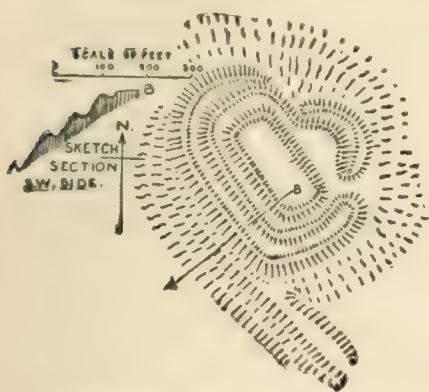


THE CASTLES,  
NORTH BEDBURN.

Though of the form classified as C in the Scheme already referred to, this interesting earthwork is included here as it is clear, upon examination, that its shape is, to some extent, incident to the position it occupies, and, were chronological order considered, its antiquity would entitle it to this early mention.

**HARPERLY.** Faint traces exist indicative of early defensive works of class B.

**HEIGHINGTON: SHACKERTON HILL, NEAR REDWORTH.** Maclauchlan mentions this, quoting various names by which the hill is known, and gives a small plan.<sup>1</sup> The 25-inch Ordnance Survey map shows no existing earthworks, but they are traceable throughout the greater part, though much obscured by the growth of timber and from other causes; parts have been mutilated to admit a road to the windmill which once stood on the hill, and other portions have been destroyed by an eighteenth-century owner. Hutchinson speaks of it thus:—‘A remarkable mount, called Shackleton, on which Crosier Surtees, Esq., has built a pleasure house. It



SHACKERTON HILL, HEIGHINGTON.

is wound round with three distinct terraces, and is thought to be the remains of a Danish fort. . . . Mr. Surtees has planted the ground, and otherwise altered it in form, so that the dimensions could not be accurately obtained on our view.’<sup>2</sup> As to its attribution to the Danes, Maclauchlan is probably

<sup>1</sup> Maclauchlan, *Surv. of the Watling Street*, 1852.

<sup>2</sup> Hutchinson, *Hist. and Antiq. of Durham*, 1794.

## A HISTORY OF DURHAM

right in saying that there is nothing about the earthworks to prevent an earlier origin. It appears to be of the Celtic period.

The curious lunar-shaped extension of the outer two banks on the north-east side, though conformable to the shape of the hill, is unusual and interesting. The rough section accompanying the plan shows the artificial work on the south-west side and indicates the sharp slope of the hill. This precipitous character extends nearly all round, but is less marked on the north where the hill is linked to the head of a steep coomb. The plan here given is based on that published by Maclauchlan, aided by recent investigations, and it must be stated with regret that much of the work shown by Maclauchlan is now hard to find, and part, on the north-east side, has entirely disappeared.<sup>1</sup>

HILTON. The works here are too indefinite to make it certain that a British stronghold existed, but such was possibly the case.

INGLETON. The broken works here are near to the Scots Dyke, with which extensive earthwork they may have been connected, and are probably of the period of the Roman occupation.

MAINSFORTH. Both by Gough<sup>2</sup> and Lewis<sup>3</sup> we are told that here was an early camp on an eminence, and that the stream known as the Little Skerne was anciently diverted from its course to form a deep fosse round a circular fortification of great height. These writers copied John Cade's statements,<sup>4</sup> but neither Hutchinson nor Surtees could find any traces of a camp. The hill is known as Narbon or Nab Hill.

QUARRINGTON. Murray's *Handbook* (1890) refers to Castle Hill, two miles west of Quarrington, as having traces of ancient fortifications, but the remains are in fragmentary condition.

### RECTANGULAR CAMPS, &c.

#### [CLASS C]

BINCHESTER. The western ramparts of this Roman station have been carried down by the river Wear; water and other agencies have destroyed much of the other defences, but the whole of the east side and parts of the north and south sides remain. Mr. Boyle states that the enclosure contains about seven acres.<sup>5</sup>

CHESTER LE STREET: ROMAN STATION. The last traces of the earthworks here have been destroyed, and are now covered by gardens and the deanery grounds. The ground falls to the east towards the river Wear, and to the north towards a small stream; on the south it is level for some distance.

EBCHESTER. Little is left to indicate that here was a strong fort, or station, of the Roman rulers, occupying some four acres between the river Derwent and a small stream, a position of natural strength, guarding the ford over the river which now separates Durham from Northumberland. As one of the stations on the Watling Street, Ebchester will be referred to in the chapter on Roman Remains.

<sup>1</sup> The writer is indebted to Mr. Edward Wooler for valuable notes and measurements.

<sup>2</sup> Gough (R.), *Additions to Camden's Britannia*, vol. iii. 1789.

<sup>3</sup> Lewis (S.), *Topographical Dictionary*, 1831.

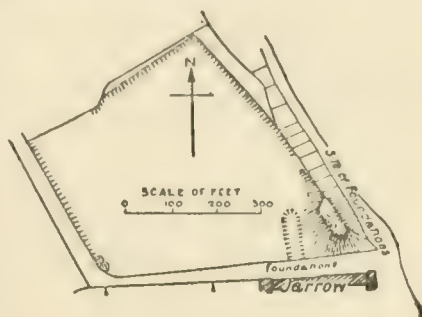
<sup>4</sup> *Arch.* vii. 1785.

<sup>5</sup> Boyle (J. R.), *County of Durham*, 1892.



## ANCIENT EARTHWORKS

**JARROW : NEAR RIVER DON.**—Very little is to be seen here except a mound at the south-east angle of the site on which a circular foundation has been uncovered. Jarrow Slake is on the east, and the mound has a steep slope in this direction and on the south to the road. The ground falls slightly to the west, but rises again at a distance of some 60 yards from the mound. Traces of Roman buildings have been found on the site.



JARROW.

**JARROW : RIVER TYNE, NEAR SOUTH SHIELDS.**—This site is now built over and all traces of earthworks destroyed, but Roman objects have been found on the spot. The position overlooks the Tyne on the west, the mouth of the river on the north, and the sea on the east. The ground is nearly level on the site, but falls beyond it to west, north, and east.

**LANCHESTER.**—A Roman station measuring about 190 yards north to south by 220 yards east to west, situated on high ground to the west of the village of Lanchester, and just to the west of the line of Watling Street, which runs parallel to its east wall. Of the walls nothing but the core is left above ground, but this is exposed on all sides except on the north, where only a short stretch can still be seen. No remains of the gates now exist. The site is approximately level, and beyond some traces of a ditch on the west and south, has no defensive earthworks. The position, on high ground in the salient angle formed by the junction of two valleys opening westward, commands a wide view ; the ground rises slightly to the west, and falls quickly to the east and south. At a short distance south-west of the camp is a circular depression, the site of a reservoir which was supplied by an aqueduct from the west. Within the area of the camp the foundations of buildings are known to remain, but little is now exposed except two apsidal chambers.



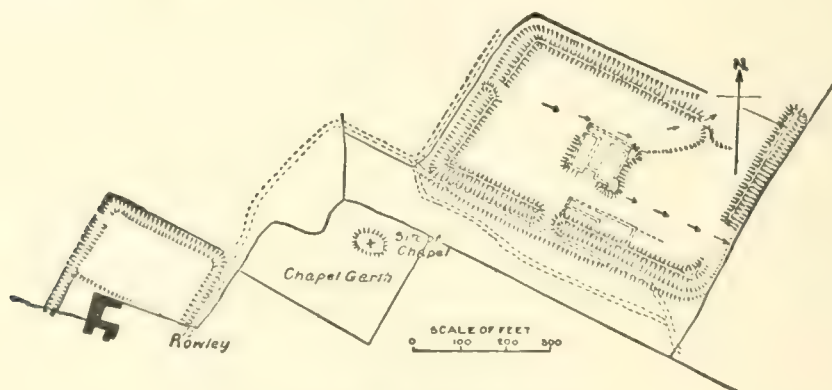
**LANCHESTER : 'CASTLE STEADS,' ROWLEY GILLET.**<sup>1</sup>—The site is a low ridge between two streams, to the south of the road from Cornsay Colliery to Waterhouses, overlooked by high ground on north and south, though at too great a distance to affect its defensive strength. The earthworks are three in number, lying in a line from south-west to north-east along the ridge. That towards the south-west is a small rectangular entrenchment, broken into by modern buildings on the south, and of no importance as a defence. Next to it,

a little to the east, is an irregular mound said to cover the remains of a chapel, and clearly occupying the site of a building. The third earthwork is the most important, and lies on the northern slope of the ridge, the ground falling north and east. It is a rectangle about 200 yards east to west by 100 yards north to south, enclosed by an inner bank, on which are traces of a wall, and a ditch with an outer bank ; the inner bank, which is the most considerable,

<sup>1</sup> Now in the modern parish of Hamsteels.

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averages some 8 feet to 10 feet high from the bottom of the ditch. The main entrance to the enclosure is from the south, somewhat west of the middle, but the defences are interrupted at several other places, namely in the middle of the west side, at the south end of the east side, and at the east end of the north side ; in all three cases the breaks are due to water. Opposite the entrance, about the middle of the enclosure, is a series of mounds covering foundations of a rectangular building, and there are traces of other lines of walling to the east of the entrance, as shown on the plan. The northern half of the enclosure is for the most part low and marshy, and there is a clearly defined course from the break in the west defences, where the water supply entered, running along the north front of the central block of buildings and then turning to the north-east and passing out of the enclosure about 60 yards from the east boundary. The north bank and ditch stop at the point where the course cuts their line, and do not run on to join the eastern defences, but the water forms a marshy place outside the lines, which seems to have been sufficient defence at this point. A small dam running northward towards the place where the north bank stops narrows the channel by which the water passes out of the enclosure, and by means of a sluice at



'CASTLE STEADS,' ROWLEY GILLET.

this point it is clear that a good part of the area within the defences could have been flooded. A second watercourse passes to the south of the central block, and runs in an easterly direction through the south end of the east line of defences, which are here practically obliterated. There is some slight evidence that the breaks in the west and east defences may have been covered by projecting masonry.

As the principal of these three works belongs to class C, it has been thought best to include the plan in this section, of course without claiming Roman origin, though some older writers have thought this an outpost of that period, which indeed it may have been.

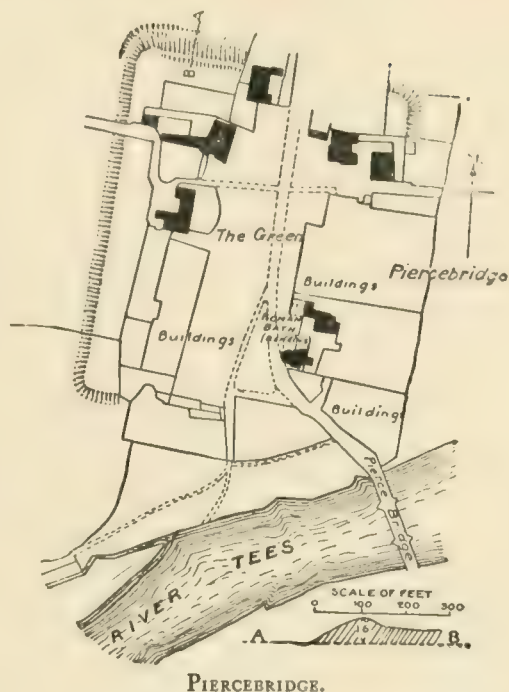
**PIERCEBRIDGE.**—The village is built over the lines of a rectangular enclosure, lying just to the west of Watling Street, which crossed the river Tees at this point, and is here diverted from its original line for a short distance, in order to pass through the village and over the present bridge. The major axis of the enclosure lies north and south, and the site is nearly level, with a slight fall towards the river, which runs in a rocky bed between high and steep banks. The two northern and the south-western angles of the enclosure remain, and are rounded in form ; the vallum can be traced on



## ANCIENT EARTHWORKS

the west side, and in part on the north, the rest being obliterated by buildings. On the west it is reduced to a slight slope only a few feet higher than the grass land outside its limits, but on the north side near the western angle it remains as shown on the section, with traces of a ditch near the angle. To the north of the site runs the main road from Darlington to Barnard Castle, and beyond it a stream, which takes a course parallel to the road, falling into the Tees some distance east of the line of Watling Street. There is no trace of masonry on the line of the vallum, but foundations and objects of Roman date have been found within and near to the enclosure.

**SADBERGE.**—The settlement here appears to have been occupied in the Roman period. The traces of defensive work may indicate a 'camp' of Class B.



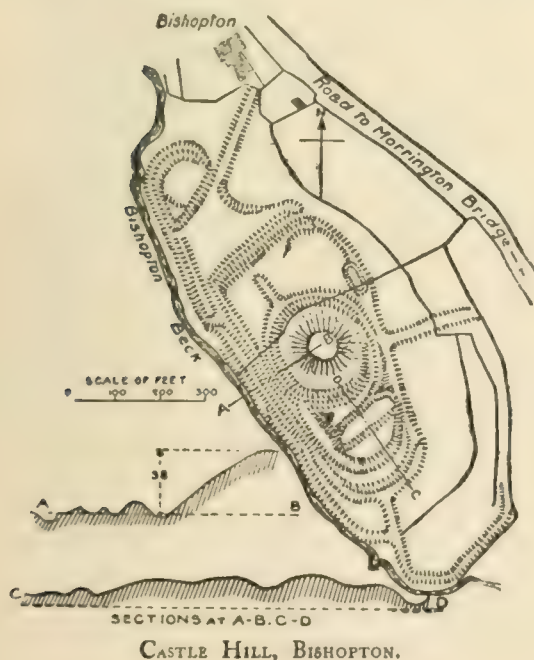
## CASTLE MOUNTS WITH ATTACHED COURTS

[CLASS E]

**BARNARD CASTLE,** see GAINFORD.

**BISHOPTON, CASTLE HILL.**—On the low ground south of the village of Bishopston is a fortified site of the mount and court type, bounded on the west by the Bishopston Beck, and by low, and formerly marshy, ground on the other three sides. The earthworks consist of a motte or mount some

38 feet high, surrounded by a ditch with a high outer bank, flanked by two lines of lower banks on the west side towards the beck, and a single line on the east. North and south of the mount are a series of higher banks and ditches, ending with rounded lines of lower defences in the low ground at either end of the site. Two causeways, one on the north, one on the east, lead from the works across the low ground to the somewhat higher levels on the north and east where the modern road runs. The plan of the defences is long and narrow, owing to the marshy nature of the site, and a dam across the stream to the north would make it possible to surround the whole work with water. No traces of masonry are to be seen.

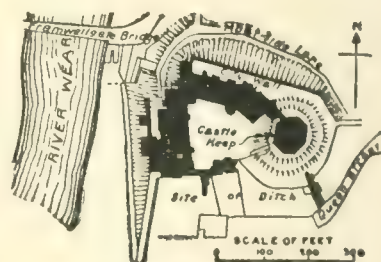


## A HISTORY OF DURHAM

Although historical detail is not included in the scope of this section, we cannot leave Bishopton without recalling that Roger Conyers, hereditary constable of Durham, is referred to as having fortified his castle against Comyn, the usurper of the bishopric, about 1143.<sup>1</sup> Whether there was here, as seems possible, a previously existing fortress cannot be said.

BLACKWELL.—John Cade, writing at the end of the eighteenth century, says that 'at Blackwell has been a very considerable artificial mount, called Castle Hill . . . but within my own memory nearly absorbed by the river' [Tees].<sup>2</sup> The present remains consist of only about half the mount, and it is said the destruction of the other portion was due to a great flood which devastated the valley in 1771. The mount is similar to that at Middleton St. George, and as, like that example, it had probably a base-court attached, we include Blackwell under Class E.

DURHAM.—The castle occupies the north end of the rocky promontory round which the river Wear runs on the east, south, and west, and completely commands the approach from the north. The earthwork defences, except the great mount or motte, are mostly levelled or obliterated by later building. The motte, which is now some 47 ft. high above the mean level of the inner bailey, now the court of University College, occupies the north-east angle of the position, commanding the original approach to the high ground, which was from the north-east. Its slopes are now terraced, but were no doubt unbroken at first. It was defended on the south, and perhaps elsewhere, by a ditch, which continued in a westerly direction across the promontory, cutting off the site of the mount and inner bailey from the level ground to the south, which must have formed the outer bailey. On the west the high rocky slope of the river bank afforded complete protection, and on the north the ground falls steeply towards the town, and though a good deal heightened by masonry rubbish from the castle buildings, follows what must have been the outline of the original scarp. At this end of the site there is a considerable depth of soil over the underlying rock, which has a fall from south to north. Whether the inner bailey was at first defended by earthworks is not clear; if so they have been entirely removed, except perhaps on the north side, where the bank may remain in part under the range of buildings. There are no traces of other earthworks anywhere on the site.



DURHAM CASTLE.

DURHAM: OLD DURHAM.—In 1785 John Cade wrote<sup>3</sup> of a work here which he called Maiden Castle, and quoted Stukeley's description;<sup>4</sup> but the latter appears to relate to the early promontory camp on the opposite side of the Wear. It must be admitted that Stukeley is obscure, and apparently confuses east with west. The point of interest to us is that Cade's paper is accompanied by an engraving of the earthwork showing it to have been distinctly of the mount and court type. We cannot learn that anything is now left to record.

<sup>1</sup> *Sartor. Hist. and Ant. of the Co. Pal. of Dur.* 1816.

<sup>2</sup> *Arch.* ix. 1789.

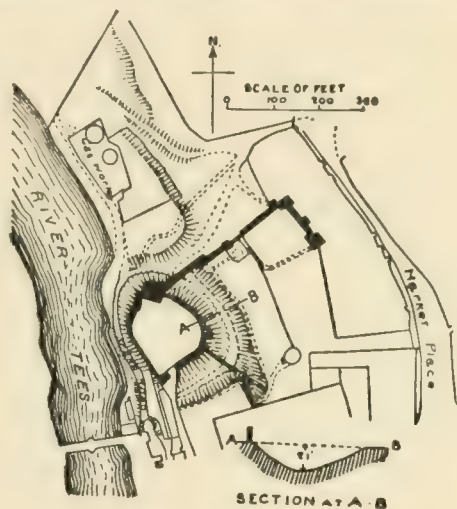
<sup>3</sup> *Arch.* vii. 1785.

<sup>4</sup> Stukeley, *Itinerarium Curiosum*, 1776.



## ANCIENT EARTHWORKS

**GAINFORD : BARNARD CASTLE.**—The castle stands on a fine natural height overlooking the river Tees, the inner ward being about 100 feet above the river. Originally it consisted of an enclosure with a maximum length of 330 yards, and breadth of 160 yards, running parallel to the river, divided into four wards; the outer to the south; the town ward to the east; and the inner and middle wards in the north-west angle; the whole being surrounded by a large fosse, or dry ditch, and each ward being defended by its own fosse. Of all these works only those belonging to the inner and middle wards now exist. The fosse of the inner ward is a fine work 70 feet wide by 30 feet deep, and the material dug from it has been used to raise the level of the inner ward, which acts as a mount or motte. On the west towards the river the cliff is precipitous, and completes the defences of the inner ward as it formerly did of the now non-existent middle and south wards. The fosses all had ramparts of earth piled up on their inner verge, that is on the side nearest to the great keep-mount; this feature, and the completeness of the system of defence by deep ditches, or fosses, is well shown in Grose's view.<sup>1</sup>



BARNARD CASTLE.

The plan given by Clark<sup>2</sup> is very unsatisfactory, as, owing to the indefinite shading, it is quite impossible to distinguish between fosses and ramparts, and he gives no indication of the natural rocky defence on Tees side. The earthen ramparts were after a time crowned with walls of masonry which remain in parts, but these relics and those of the castle buildings will be described in the topographical section.

**MIDDLETON ST. GEORGE : TOWER HILL.**—A partly natural mount on the high north bank of the Tees, isolated on the north by a small valley, showing traces of scarping on its north and west sides. On the west is an old road known as Pounteys Lane, which descends steeply to the river at a point where it was formerly crossed by a bridge named Pounteys Bridge. On the south-west the site is bounded by the grounds of a modern house, the making of which has destroyed any remains of earthworks on that side. The mount seems to have had a court attached to it, of which only faint remains now exist, but Mr. Wooler informs us that old labourers tell of the levelling of ramparts and the filling of a fosse which once surrounded the mount. The latter is now about 20 feet in height and planted with trees. Mutilated as this earthwork is, enough remains to suggest that here was a stronghold commanding an important ford across the river Tees. 'Tower Hill' is a modern appellation.

### HOMESTEAD MOATS

[CLASS F]

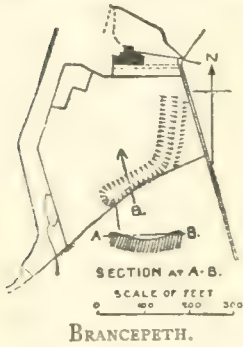
**BRANCEPETH : NEAR CROOK.**—A ditch running north and south at an obtuse angle joined by a second ditch running south-west. If the site was

<sup>1</sup> Grose, *Antiquities of England and Wales*, i. ed. 1772.

<sup>2</sup> Clark, *Medieval Military Architecture in England*, 1884.

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ever enclosed by ditches on the north and west all traces of them have disappeared. There is a stream on the west, and the general fall of the ground is from north-west to south-east, but the levels have been much altered by colliery subsidences.



BRANCEPETH.

**BILLINGHAM.**—Belasis Hall in this parish has a moat of irregular form, well defined on the south and east sides.

**COCKFIELD.**—The hall here was surrounded with a moat, of which some traces remain.

**DURHAM.**—Houghall manor-house, once a strong place with fortifications. Traces of the moat remain in part.

**EVENWOOD.**—The manor-house of the bishops of Durham, known as the Barony, stood here guarded by a moat, which still exists.

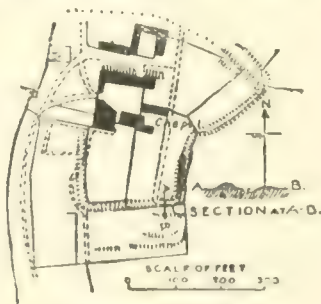
**HAMSTERLEY, SHIPLEY MOAT, HIGH SHIPLEY.**—A rectangular site, sloping steeply in a north-easterly direction to the Shipley Beck. It is surrounded by a ditch which is well marked on the south, but gradually dies out with the fall of the ground. The beck at its nearest point is about 120 yards distant, and there seems to be no other water supply. From the nature of the ground the ditch must always have been dry.

**LANCHESTER : HOLMSIDE HALL.**—A rectangular space measuring about 200 feet east to west is enclosed on the west, south, and east by a bank and ditch. On the bank are traces of a wall at the south-east angle, and an outer line of ditch seems to have run parallel with the west bank. At 150 feet from the south-east angle the south bank and ditch turn off in a north-easterly direction for 200 feet towards a small stream which runs east and west, and then turning westward with the stream, seem to have enclosed the site on the north side, but in this part are quite obliterated. On the west nothing is now to be traced of the northern half of the probable boundary line, but it may have joined the bank still existing at the south-west. The ground falls slightly towards the north-east.

**LANCHESTER : LANGLEY HALL.**—The ruins of the hall are surrounded by a ditch. The site falls steeply to the south-west, and the ditch is much wider on the north and east than on the south and west. The south-west



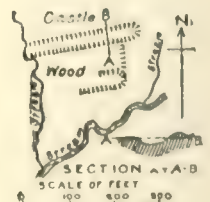
SHIPLEY MOAT,  
HAMSTERLEY.



HOLMSIDE HALL,  
LANCHESTER.



LANGLEY HALL,  
LANCHESTER.



CASTLE WOOD,  
WOLSHINGHAM.

side has been banked up to give more depth of water, but the site is in no case a strong one, as the ground rises quickly to the north. The original entrance seems to have been from the south-east, but the ditch has been destroyed on this side by a modern road.

**NEWBIGGIN (WEST).**—Here is a small homestead moat now without any building on the enclosure.



## ANCIENT EARTHWORKS

**SUNDERLAND BRIDGE.**—The moat of Butterby manor-house remains, together with the ancient gateway. The moat, though now dry, was capable of being filled with 15 feet of water.

**WOLSINGHAM : CASTLE WOOD.**—The site falls southwards towards a stream, and is bounded on the north by a ditch extending some 120 yards westward from the bank of a small stream, which appears to form the only defence on the south. The work may have been a rectangular enclosure, and on the east and south are low banks, that on the south stopping short some way eastward of the small stream mentioned above. A little south of the north boundary, and towards the west end of the enclosure, is a rectangular trench which may mark the lines of the walls of a building or enclosure now removed. To the east of the site a second small stream runs south-west to the larger stream on the south, but the north ditch stops some way short of it.

**WOLSINGHAM : BRADLEY HALL.**—An irregular four-sided site enclosed by a ditch which remains perfect on the north and west, and in part on the east, but is obliterated on the south. The Bradley Beck runs in a southerly direction at some 150 yards distance from the west side of the site. In the south-west part of the area, and probably just within the line of the destroyed southern arm of the ditch, are farm buildings which are in part ancient. The general fall of the ground is to the south, towards the river Wear.

There are other homestead moats in the county ; see sites marked F on accompanying map.



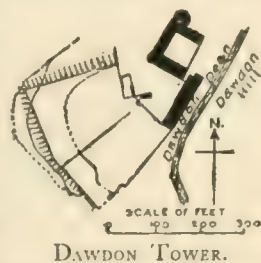
### ENCLOSURES RAMPARTED AND FOSSED, &c.

[CLASS G]

**BISHOP MIDDLEHAM : THE CASTLE.**—The site of the castle of Middleham is on a bold promontory, approximately in the shape of an isosceles triangle, projecting southwards from the high ridge on which the church is built. The apex of the triangle is to the north, and the sides of the promontory slope steeply to the level ground on the east, south and west, and show little traces of scarping except perhaps on the south, where, at the foot of the slope, a ditch runs east and west. The lines of the walls of a large building show in the turf at the south end of the site, and here and there masonry is exposed. The position is a very strong one, the only easy approach being from the north, at the apex of the triangle.

**DALTON-LE-DALE : DAWDON TOWER.**—The site is a hollow in the west bank of Dawdon Dean, overlooked by higher ground on the north-west and south-west. The site slopes eastward to the bank of the stream, and can never have been of any defensive strength. The ground has been levelled, and the works shown on the Ordnance map, whose outline is here marked by broken lines, do not now exist.

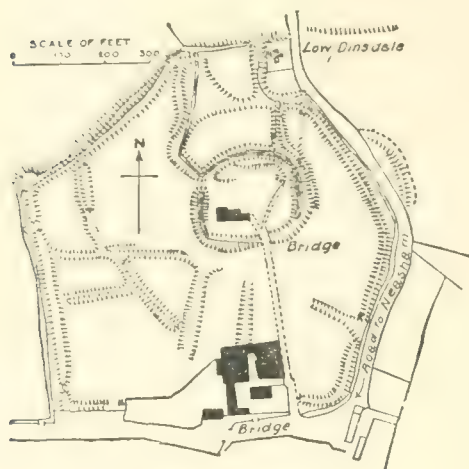
**DINSDALE : LOW DINSDALE.**—The area enclosed within a bank and ditch is of irregular shape, its greatest diameter being about 800 feet. The site is nearly level, being in the low meadows on the banks of the Tees, but the ground rises gently on the



## A HISTORY OF DURHAM

western side. The water supply is from the south and west. Within the enclosure are several raised sites surrounded by ditches, the most important being nearly circular in shape, with a well-defined bank and ditch; within it stands the manor house. There are no other buildings in the area except

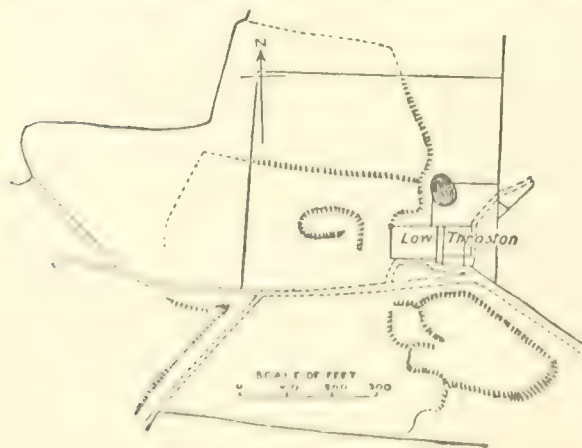
some farm buildings on the south boundary. On the south and east it is bounded by roads, but there are traces of other earthworks in the meadows across the road to the east. The banks are in no case of much strength, those on the west boundary being the highest, where the enclosure is commanded from the rising ground immediately outside.



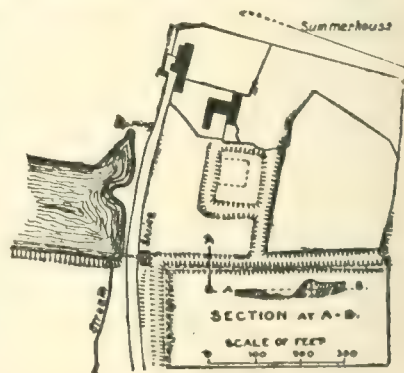
LOW DINSDALE.

fairly well preserved, and consist of a bank and ditch; on the top of the bank are traces of a wall. On the south and east the defences are destroyed by cultivation, and the enclosure may have extended further in both directions. From about the middle of the north side a ditch runs northward for some 77 yards, having on the west side, at a distance of 35 yards from the main enclosure, a second rectangular site 26 yards square, surrounded by ditches, and showing traces of foundations of buildings. All the ditches have been supplied with water from a stream on the west side, which has been dammed to form a pond of considerable extent, from which a sluice led to the north-west angle of the main ditch.

**HART: LOW THROSTON.**—A series of banks of irregular shape, and for the most part of very slight elevation. Parts on the north and west have been destroyed in recent years, and a road on the south has also done some damage.



LOW THROSTON.



SUMMERHOUSE, GAINFORD

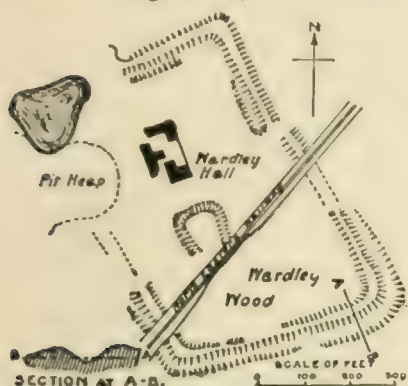
The recently destroyed portions are shown on the plan by a single broken line. The site stands high, and the ground falls from it considerably on south, west, and east. The best preserved banks are those at the south-east corner, but the whole is too fragmentary to admit of any definite conclusions as to the extent and intention of the work. There is a well about 100 yards west of the site.

**JARROW: WARDLEY HALL, HEWORTH.**—A site measuring 220 yards

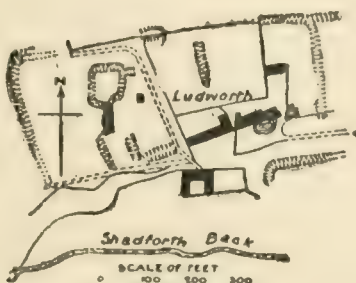


## ANCIENT EARTHWORKS

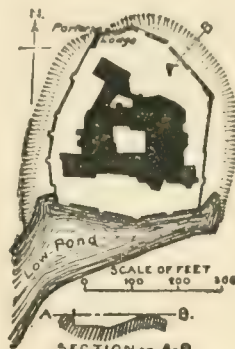
north-west to south-east by 150 yards south-west to north-east. A railway line cuts across its southern half, and a pit heap encroaches at the north-west, obliterating the greater part of the west side, but elsewhere the bank and ditch



WARDLEY HALL.



LUDWORTH TOWER.

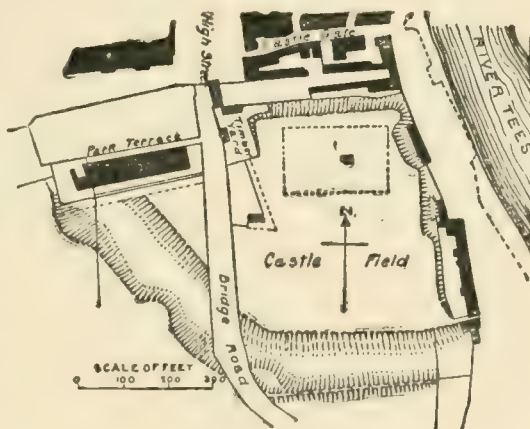


RABY CASTLE.

are fairly well preserved. The site is nearly level. Within the enclosure just north of the railway line is a low rectangular ridge which may mark the site of a destroyed building.

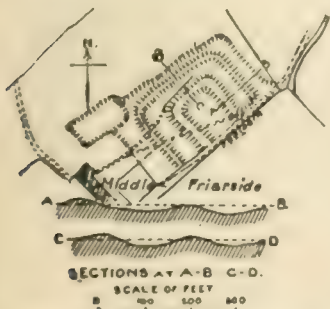
**PITTINGTON: LUDWORTH TOWER, SHADFORTH.**—On this site are the remains of a small bank and ditch enclosing a rectangular area, within which are the ruins of the tower, now reduced to a few walls. The ground falls on the west, south, and east, the steepest slope being to the south, to the line of the Shadforth Beck. On the north side the ground is level.

**RABY CASTLE.**—The ground falls on all sides from the site of the castle, but not steeply enough to make the position a strong one for this reason alone. The earthwork defence consists of a broad ditch, now dry except on the south. The buildings of the castle stand in a walled enclosure, surrounded by the ditch, and entered only from the north-west. To the north of the site is a small stream.



STOCKTON CASTLE.

**STOCKTON-ON-TEES: THE CASTLE.**—The area known as the Castle Field, an irregular four-sided site on the bank of the river Tees, defended on the south and west by a ditch of considerable size, is now entirely built over, and the ditch filled up. A short piece of the bank at the north-east corner alone remains at the present day, but the condition of the earthworks before their destruction is shown on the annexed plan.



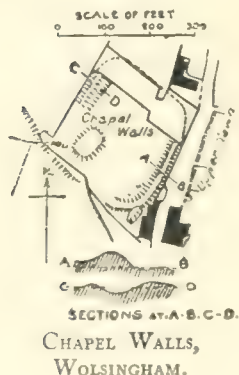
MIDDLE FRIARSIDE, TANFIELD.

**TANFIELD: MIDDLE FRIARSIDE.**—A small rectangular enclosure surrounded on north-east, north-west, and south-west by a bank and ditch, outside which are a second bank and ditch of smaller size. At the north-east angle there is a connexion between the two ditches, and at the west angle of the outer ditch a shallow rectangular depression. The ground slopes

## A HISTORY OF DURHAM

steeply down to the river Derwent on the north-west, but rises on the south-east, and on this side there are no traces of earthworks of any kind.

**WOLSHINGHAM : CHAPEL WALLS.**—A rectangular enclosure about 220 feet north to south by 200 feet east to west, surrounded by a bank and ditch, with, in places, a low outer bank. The ground falls slightly on all sides except the north, and the bank is most prominent on the east. Along this side runs the main road from Wolsingham to Lanchester, having to the east of it a small stream following at this point the line of the road. The north end of the enclosure has been destroyed by gardens, and its former extent is shown on the plan by a broken line. In the south-west corner is a rectangular site which appears to mark the position of a building, and near it, in the south-west angle, is a well.



### ANCIENT VILLAGE SITES

[CLASS H]

**ARCHDEACON NEWTON.**—An irregular oblong enclosure which appears to have been surrounded by a bank and ditch; its northern boundary following the line of Newton lane. The site is approximately level, measuring some 400 yards north to south by 230 east to west; its major axis runs about north-east and south-west. The south-east angle of the enclosure is occupied by buildings which are surrounded by a bank and ditch adjoining and parallel to the lines of the outer defences on the south and east. On the north and west sides they were probably defended in the same way, but only slight traces remain. The west side of the enclosure is occupied by houses, and nothing is to be seen except a bank at the north end, which stops short of the line of a hedge enclosing ploughed land; the north and east sides are unoccupied, and show a series of low banks running east and west and dividing the area inside the outer bank into a series of oblong spaces, bounded on the west by another low bank running in a south-westerly direction towards the north-west angle of the enclosure already noticed.

On the northern boundary of the site is a slight rise in the ground, apparently natural, the sides of which have been cut to a regular slope, and a ditch made along its southern limit. The banks and ditches are everywhere slight, and seem to be boundaries rather than defences, and the site has no natural advantages from the latter point of view.

**EASINGTON.**—Remains, said to be of the defences of a Saxon village called Yoden, are to be traced in a field near Castle Eden,



ARCHDEACON NEWTON.



## ANCIENT EARTHWORKS

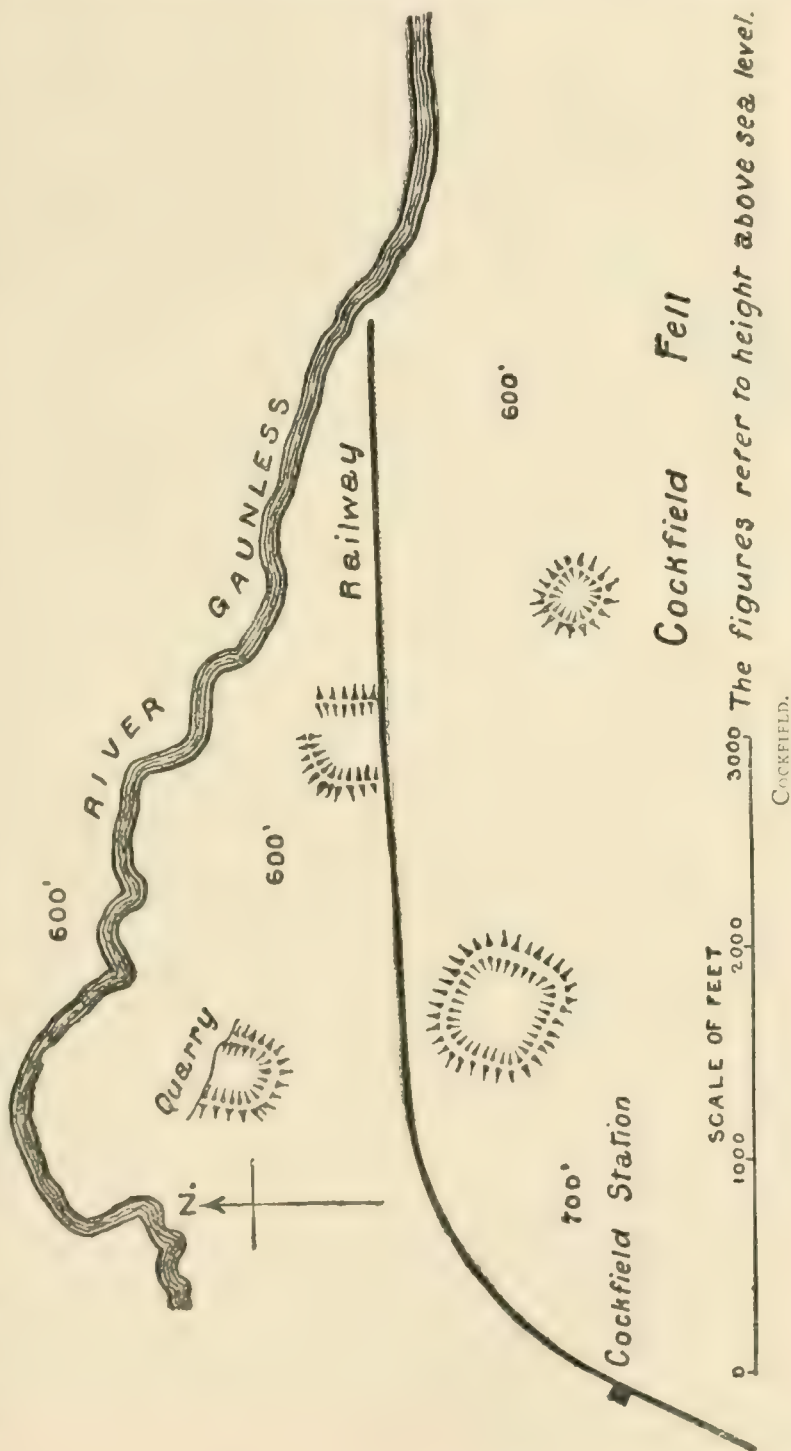
halfway between Harden and Eden Hall. Though tradition has long claimed them as Saxon, we are not aware of any proof of such origin, and excavations have revealed only later relics. The main defence seems to have been a deep fosse.

### UNCLASSIFIED EARTHWORKS

(CLASS X.)

COCKFIELD.—Traces yet remain of four small ‘camps,’ on Cockfield Fell, which attracted the attention of John Bailey, who in 1777 made a plan of them.<sup>1</sup> The origin of these curious little enclosures is doubtful. Mackenzie<sup>2</sup> writing in the early part of last century expressed the opinion that they might be no more than the refuse of old coal works, but this statement leads one to doubt whether he ever examined them. True enough the coal workings have scarred the land around, but coal refuse would hardly have been carefully banked round to form enclosures of this nature. The people of Cockfield seem to think they were meeting-places of the Primitive Methodists; they may have been so used, but are not likely to have been made for the purpose.

Bearing in mind the natural protection afforded by the valley of the Gaunless on the north, and that a long entrenchment crossed the hill on the south of the ‘camps,’ it is possible, as stated in the introductory remarks,



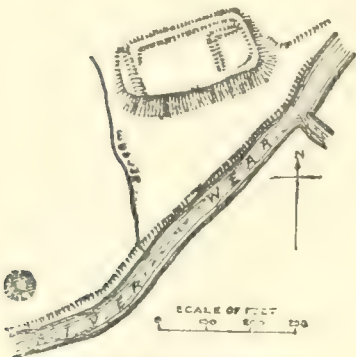
<sup>1</sup> *Antiquarian Repertory*, iii.

<sup>2</sup> Mackenzie and Ross, *View of the Co. Pal. of Dur.* 1834.

## A HISTORY OF DURHAM

that, if not of pre-historic date, these works may be records of the struggle between the English and Scots in the fighting days of the Plantagenets.

**STANHOPE: PARK PASTURE.**—An oblong enclosure on the north bank of the Wear, having a steep natural slope on the south side, from the foot of which the land is level to the river, which runs close to the south-east angle of the work. To the north the ground rises slightly, but otherwise the site is nearly level. To the west is a small stream running nearly due south to the Wear, through low and partly marshy ground. The area is enclosed by a low bank, which is double on the west, and on the south and west sides are traces of a rampart of pebbles. A short distance to the south-west, and close to the river, is a mound, now nearly destroyed, which seems to have been in part composed of pebbles or boulders like those of the oblong enclosure.



PARK PASTURE, STANHOPE.

**STANHOPE: PARK CRAG.**—A stirrup-shaped area obtained by levelling the gentle slope of the site from south to north, the soil being used to make up the ground on the south boundary. The area thus obtained is divided midway by a low ridge which runs north and south, extending some way beyond the north boundary. Some distance to the east a second ridge runs parallel to the first, being joined at right angles by a third, which prolongs

the line of the south boundary of the levelled site. All banks and ridges show traces of rough walling. To the south and west the ground slopes down steeply to Park Burn, but on the north the ground rises to a wooded hill. There is said to have been a third little enclosure at Stanhope, and Mr. Boyle suggests that these small camps may have been formed during the struggles between English and Scots in Edwardian days.

### DYKES AND BANKS

**SCOTS DYKE.**—The Scots Dyke, known under a variety of names in different parts of its long course, has been an object of speculation to writers from the early part of the eighteenth century to the present time. From Mr. Edward Wooller, the last to write upon the subject, we learn that the most northern trace of the dyke is found at Galashiels in Selkirkshire, where the ditch is 25 feet wide, and has on each side a rampart of stones and earth 9 feet to 10 feet high. Thence southwards it is with many breaks to be followed to Peel Fell in Northumberland. Crossing that county it enters Durham at Shorngate Cross, from which point it may here and there be traced to Weardale, where it is in evidence at Stanhope; thence it seems to follow the river till it crosses from the northern bank at Witton and runs south to Cockfield, then turning south-east to Gainford, where, crossing the river Tees, it passes out of the county of Durham. Mr. Wooller finds traces of the dyke southwards to the Swale, and considers it probable that it may be followed far south, possibly even to Wincobank, the great stronghold of the Brigantes which overlooks the valley of the Don near Sheffield.

**COCKFIELD.**—Here are the remains of an entrenchment, about 2,300 feet in length, which guarded the space now occupied by the small 'camps' to which reference has already been made.



# ANCIENT EARTHWORKS

## TUMULI, BARROWS, ETC.

CHESTER-LE-STREET : FOX PARK, BEAMISH.—The mound is low with a very gentle slope ; it occupies a fine position, and the levels fall quickly to the east towards the Red burn, and to the north and south. There is also a slight slope to the west.

CONISCLIFFE.—There is a tumulus here at High Coniscliffe.

DALTON-LE-DALE : CROUP HILL.—A low mound, wide and flat, a few stones are to be seen on it. It stands in a prominent position, the ground sloping down from it on all sides except the north.

DURHAM : MAIDEN BOWER.—A small circular mound, on the southern slope of a narrow valley west of the viaduct adjoining the railway station. Owing to the steep slope of the ground, the top of the mound is nearly 30 feet above the natural level on the north side, and less than 20 feet above it on the south. It has a terrace at 6 feet below the top, and is approached from the south-west by a ridge which dies into the slope of the valley as it rises southward. The position is commanded at close range by high ground on the west, south, and east, while on the north the levels fall quickly to a small stream about 200 yards distant, in the bottom of the valley.

HOUGHTON-LE-SPRING : COPT HILL.—A mound overgrown with trees, commanding a wide view to west and south, the ground falling rapidly in both directions. It is overlooked by high ground on the east.

HOUGHTON-LE-SPRING : MAIDEN HILL, HETTON-LE-HOLE.—This mound is now destroyed.

HUNSTANWORTH.—There is a barrow here, also a mound or tumulus in Nuckton East Park.

MIDDLETON-IN-TEESDALE : HEMPSTONE KNOLL.—The remains of the 'Knoll,' a circular mound about 5 feet high, stand to the north of the Bell Sike, overlooked by higher ground on north, south, and west. About 150 yards away to the north, and at a considerably higher level, commanding a fine view of the Tees valley, is the site of a circle of standing stones, now all removed.

RYTON.—There is a tumulus, about 20 feet high, in a wood north of the church, and another existed near Bradley Hall.

Old writers mention other barrows and tumuli, mostly long since destroyed. For example—John Cade, writing at the end of the eighteenth century, refers to 'many barrows' in the park at Witton Castle.<sup>1</sup> Hutchinson mentions a barrow 'now very conspicuous' at Aykley Heads, near Durham, and tumuli at Ravensworth, Maiden Law, near Lanchester, and on Brandon Hill, Brancepeth.<sup>2</sup>

We desire to express our obligations to Canon Greenwell and Mr. Edward Wooler of Darlington for much valuable information respecting the earthworks of the county.

<sup>1</sup> *Arch.* ix. 1789.

<sup>2</sup> *Hist. and Ant. of County of Durham*, ii. and iii. 1794.





# SCHOOLS

The ancient provision of secondary education in 'the Bishoprick' of Durham, before the Reformation, was in all probability far greater relatively to the population than that made at any other period until we come to the present century. The county was studded with the bishop's manors to which, like the king, he shifted his court from time to time as business required, and, perhaps, as his numerous retinue ate up the country round. In the towns in which the chief houses were planted, probably because the larger population made them safer, while the revenues were more ample and provisions more abundant, the churches became rich and were collegiate. Whether it was from a love of a good musical service, or of state, or merely of cultured company, certain it is that the bishops loved to establish in their manors wherever possible, instead of a single priest, rector, or vicar, a staff of priests with their subordinate ministers, and, as an essential, indeed, statutory, that is, canonical requirement of collegiate churches, a public grammar school with a master, and, usually, also an usher to teach it. Unfortunately, but scant evidences of the collegiate churches of the bishops in Durham have been preserved. While there is ample evidence as to the effective maintenance of the grammar schools in the Yorkshire possessions of the church of Durham at Northallerton, at Howden, and at Hemingbrough, there is none as to those of Durham itself. The reason is that the priors of Durham had somehow, through the laziness or the intermission of the bishops, acquired the rights of 'Ordinary of the spirituality of St. Cuthbert in Yorkshire,' in Allertonshire, as it is termed, Howdenshire, and Hemingbrough; and the registers of the Priory remain and give us a great deal of information, while the registers of the archdeacons are mostly lost, and those of the bishops are imperfect and often meagre. So while we know that Grammar Schoolmasters were appointed, and two schools, one of grammar and the other of song, were duly kept at Howden in 1393,<sup>1</sup> at Hemingbrough in 1394, and at Northallerton in 1321<sup>2</sup> (which at Northallerton became one school in 1385 and later), there is no evidence whatever yet forthcoming as to the existence of the grammar school of Durham itself before 1414, nor, except for a casual reference to a schoolmaster coming from Darlington to Durham to fill a casual vacancy in 1416, of the grammar schools in any of the collegiate churches in the county of Durham before the Reformation. Yet it is almost certainly lack of records and perhaps lack of access to and of research in existing records, not the lack of the schools, that prevents us from filling up this page in the history. We cannot doubt that if dependencies in Yorkshire were properly provided with schools that the capital itself and the nearer colleges of Bishop Auckland, Chester le Street, Darlington and Norton were not left without those inseparable accidents of collegiate churches.

At Norton, indeed, there is evidence of the conversion of the prebends of the collegiate church in its latter days into University exhibitions. At Barnard Castle, where an ancient guild existed, the document recording its dissolution gives evidence of its revenues being partly applied to education.

If, however, Durham is deficient in evidence as to its schools in early days, it compensates for it by the abundance of documents as to the Commonwealth and Protectorate periods, during which in common repute schools were stifled, if not killed. The truth is exactly the opposite. In those parts of the country in which Parliament prevailed, not only were existing schools nourished but augmented, and new schools were multiplied. On 22 February, 1649-50, a bill was brought into Parliament 'for the better propagating of the Gospel in the four northern counties, and for the maintenance of godly and able ministers and schoolmasters there,' and commissioners appointed for the purpose. The dealings of this commission with the endowed grammar schools are related under the heading of the separate schools. Besides this, they instituted schools, chiefly elementary, all over the county. Thus, 1 December, 1652, they ordered that £15 a year 'bee granted for the maintenance of a schoolmaster at Ferry Hill for the education of youth in piety and good literature in that towne and the townes and places adjacent.' Good literature meant grammar. But on 4 March, 1652-3, 'whereas there is exceeding great want of a schoolmaster in the part of Sunderland to teach children to write and instruct them in arithmetique to fitt them for the sea or other necessary callings,' they ordered £5 6s. 8d. to be settled upon George Harrison, as schoolmaster, for the purpose. A similar formula was used as late as 3 March, 1655-6, at Nether Heworth, where £16 was settled, and trustees appointed to manage the school. Whickham, Stanhope, Staindrop, Brancepeth,

<sup>1</sup> *Early Yorkshire Schools* (Yorks. Arch. Soc. Rec. Ser. 1903), ii. 84.

<sup>2</sup> *Ibid.* 60.

## A HISTORY OF DURHAM

Easington, Shincliffe and Lanchester were the recipients of similar favours between 1650 and 1653. Indeed, if the restoration had not taken place and destroyed the Durham schools as it destroyed Durham college, the educational movement of the nineteenth century would have been anticipated in elementary as in University education.

### DURHAM MONASTERY SCHOOLS

At Durham, if we were to believe the uncritical utterances of most writers on early education, we should find the monks of the cathedral monastery keeping a great cloister school for the enlightenment of the whole county and diocese. What we do find there, as at other monastic cathedrals, is a school, so small as to be no school, kept by monks for intending monks, in the cloister; a rather larger school kept under the governance of the monks, but taught by secular clergy, for a few charity boys in the almonry of the monastery; and, quite outside of the monastery, a real public grammar school with which the monks had nothing whatever to do either in being taught or teaching in it, maintaining or managing it; but a school superintended and, at Durham, endowed by the bishop, for the use of the general public; a school of precisely the same character as other 'public' schools, the public grammar schools, that is, which have furnished secondary education to the upper and middle classes and a selected few from the lower classes 'from the earliest times to the present day.'

Oddly enough Durham furnishes no actual evidence of any monkish so-called school till after its dissolution, of any almonry school before 1352, or of any public grammar school before 1414. Yet the first and the third must have existed *ab initio*; the third indeed from the days of the canons of Durham of the old foundation, before they were turned out, as at Winchester, at Worcester, and at Canterbury, to make room for monks: on the plea of immorality, an immorality which appears to have consisted in the possession of wives and children and private property.

By a curious accident the first definite mention of education in connection with Durham is in reference not to secondary or school education, but to 'tertiary' or University education; and that, though of Durham youths, not at Durham but at Oxford.

### DURHAM HALL AT OXFORD

In the year 1286<sup>1</sup> the prior and convent of Durham bought from Mabel, abbess of Godstow, part of the present site of Trinity College, then 5 acres of arable land in the suburbs of Oxford. We learn from the chronicler, Robert of Graystones, that Hugh of Darlington (prior 1286-90) sent monks to study there; whilst Richard<sup>2</sup> of Hoton, his successor, 'prepared a place at Oxford and caused it to be built.' These seem to be the earliest<sup>3</sup> unquestionable notices of the foundation of a hall or cell of Durham monks at Oxford. The cell of St. Leonard's, Stamford, which seems to have been another resort of Durham monks for the purposes of University education in the fourteenth century, had a separate endowment, but the Oxford Hall seems to have been directly maintained by payments from the mother-abbey for the first century of its existence. It was not till the year 1380 that Bishop Hatfield converted Durham Hall into an endowed college. The prior of Durham himself, John of Boryngton, went to London and Northampton to recover a debt of £100 from the king, 'and for the college at Oxford to be founded by the bishop,' whilst a pipe of Malvoisie or Malvoisin, costing £7 6s. 8d., was given to the archbishop for his friendship in making the charters. Ultimately a five-part indenture<sup>4</sup> was drawn up between the prior and convent, the bishop of Durham, the bishop of Lincoln, the archbishop of Canterbury, and the University of Oxford; but it was not until 8 November, 1387, that the endowment consisting of the churches of Frampton, Borsalls, Ardington, and Freskleton was granted under a bull of Pope Urban VI., that of Brantingham being afterwards added. It was to consist of eight monks of Durham, of whom one was to be prior, to perform services for the souls of the king, the founder and his relations, and to be students in the superior faculties of law and divinity; and of eight 'secular scholars,' four from the city or diocese of Durham, and two each from the Yorkshire domains of the monastery at Northallerton and Howden, 'principally intent on grammar and philosophy,' and reading for their sophisters or bachelor of arts degree. These were inferior to the monks in both age and subjects of study and also in social status, waiting on the monk-students in hall and elsewhere, and dining 'at the second table' with the clerk and other servants. They were, in fact, in the position of the servitors or sizars of later days. Thus endowed, Durham College successfully carried out the small work for which it was chiefly founded—that of ensuring that perhaps a tithe of the monks of Durham were educated men. Six of the wardens became priors of Durham;

<sup>1</sup> *Some Durham College Rolls* (Oxf. Hist. Soc.), 1896; *Collectanea*, iii. 7, by H. E. D. Blakiston, and *Trin. Coll.*, by H. E. D. Blakiston (1895), p. 5.

<sup>2</sup> Blakiston, *Trin. Coll.* p. 4.

<sup>3</sup> Dr. Fowler has suggested that in a notice of 'a clerk going to Exon' in 1278 we should read 'Oxon.' See *How Durham University* (1904), p. 2; *Extracts from Durham Account Rolls* (Surtees Soc.), 99, 100, 103, iii. 485.

<sup>4</sup> Wilkins' *Conc.* ii. 14, from Durham MSS. 14B. iv. 41, f. 222b.



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indeed, from 1478 to the dissolution all the priors had been wardens; and Hugh Whitehead, ex-warden and prior, became the first dean of Durham; while one Richard Bell passed from the office of prior of Finchale to the see of Carlisle, 1478-96.

The college was included among the possessions of the monastery of Durham surrendered to Henry VIII. Among the king's projects has been found a design for a Durham college, with a provost, four readers, one of 'humanytie in Greke,' another of 'Dyvinitie in Hebrew,' a third 'both of Dyvinitie and humanytie,' and a fourth in 'physike'; nine 'scollars, to be taughte both gramer and logyke, in hebrew, greke, and lattyn,' twenty students in Divinity, ten at each University, and a schoolmaster and usher; total estimated cost £710 a year. Unfortunately the easier expedient was adopted of the establishment of a dean and chapter, and the college was granted to them. On 20 March, 1544, it was again given up to the king; and eventually on 30 May, 1556, taken possession of by a president, twelve fellows, and eight scholars, as part of Trinity College founded in 1555 by Sir Thomas Pope. But the new college had no connexion, either in endowment or in the place from which its inmates came, with the old.

### THE NOVICES' SCHOOL

We now pass to the school which fed the college. Though a novices' school must have existed *ab initio* in the monastery, we have absolutely no light thrown on it or its working until we come to that curious *laudatio temporis acti*, 'The Rites of Durham,' written, perhaps, soon after 1540, and known to us through a copy of about 1593. The account of the novices, a *locus classicus* on the so-called novices' school,<sup>1</sup> tells 'how in the Weast ally of the cloisters towards the northe ende there was a fair great stall of wainscott where the novices did sitt and learne, and also the master of the novices had a pretty stall or seat of wainscott adjoyning on the south side of the Treasure house, down over against the stall where the novices did sitt and look on their bookes; and there did sitt and teach the novices both forenoon and afternoon; and also there were no strangers nor other persons suffered to molest or trouble any of the said novices or monks in their carrells, they being studying . . . for there was a porter . . . to keep the cloyster door . . . There<sup>2</sup> was alwayes vi. novices which went daly to schoule within the house for the space of vii. yere, and one of the eldest mounckes that was lernede was appoynted to be there tuter. The sayd novices had no wages, but meite, drinke, and clothe for that space. The maister or tuter's office was to see that they lacked nothing, as, cowles, frockes, stammynge,<sup>3</sup> beddinge, bootes and sockes; and whene they did lacke any of thes necessities, the maister had charge to caule of the chamberlaynes for such things; for they never receyved wages nor handled any money in that space, but goynge daly to there bookes within the cloyster. And yf the mr. dyd see that any of theme weare apte to lernyng and did applie his booke and had a prignant wyt withall, then the mr. did lett ye prior have intelligence; then streighte way after he was sent to Oxforde to schoole, and there dyd lerne to study devinity; and the resydewe of the novices was kept at there bookes tyll they coule understand there service and the scriptures; then at the foresayde yeres end they dyd syng their first messe.' They had their recreation. 'On the right hand as you goe out of the cloysters in to the fermery and ye commone house, there was belonging to ye commone house a garding and a bowling allie on the back side of the house towards the water for the novices some tyme to recreate themselves, when they had remedy<sup>4</sup> of there master, he standing by to see ther good order.' We are not told what the novices were taught in this school; a modicum of grammar, no doubt, and a modicum of song; but, judging from the title of the master of the novices at Canterbury—that of *magister ordinis*—chiefly the rule of the order. For otherwise it would have hardly been necessary to provide, as was done in the Benedictine statutes of 1334, for a grammar master at the monastery, who might be, and generally was, a secular clerk. There is no evidence of any such grammar master ever being appointed at Durham. Having diligently searched the prior's registers, the only person I can find appointed to do any teaching of the novices is a master not of grammar, but of song; and that not until 4 December, 1513.<sup>5</sup> Then an indenture was made between Prior Thomas Castell and Thomas Hashewell, singer (*cantorem*), by which Hashewell was 'retained and firmly sworn to serve the prior and his successors for term of his life, in form underwritten; viz. that he shall freely (*gratis*) labour to instruct assiduously and diligently those monks of Durham and eight secular boys whom the prior or his deputy should appoint to learn it, in the best way he knows, both to play on the organ<sup>6</sup> and plain song and accompanied song,

<sup>1</sup> *Rites of Durham* (Surtees Soc.), 84.

<sup>2</sup> *Ibid.* 96. This passage comes from an MS. c. 1600.

<sup>3</sup> 'Estamine,' 'stamina,' shirts of linsey-woolsey.

<sup>4</sup> This is the old mediæval word for a holiday, cf. *Memorials of Southwell Minster*, when in 1487 the complaint was made that the master 'indiscrete dat remedium scolaribus.' At Winchester a 'remedy' is still the term for a holiday, which is not a holy day.

<sup>5</sup> Prior's Reg. v. 156.

<sup>6</sup> *Tam ad modulandum super organa quam ad planum cantum et organicum, decantando, scilicet, plane songs, priknot, faburdon, dischant, sware note, et countre.*

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singing plain song, pricknote, faburdon, discant, square note and counterpoint, to the utmost of his power; teaching them four times on every week day, twice in the morning, and twice in the afternoon, concealing from them nothing of his knowledge,' and himself take part in the services.

He was to be given £10 a year paid quarterly, with three yards of cloth of the suit of 'gentlemen clerks.' When incapacitated he was to receive a pension of five marks. His successor,<sup>1</sup> on 17 February, 1537, was John Brymley, whose pay was, however, £6 a year only, but he was to have his meals 'with the prior's own brethren,' and, when the prior was away, 'in the hall of the Inn of the Monastery called le Ghest Hall' (in aula hospicii prioris monasterii vocata le Ghest Hall). 'John Brymeley, layman,' appears in 1535,<sup>2</sup> as 'instructor of the four boys, having for his fee issuing from lands in Hebbarne and Simondside, by foundation of Thomas Castell, £6 13s. 4d.' It would seem, therefore, that the appointment of Hashewall as Song-master was the first, the foundation being then new in 1513. But there must have been some earlier provision of the sort as far as the young monks were concerned, but perhaps for singing only, not organ playing as well, since the Sacrist in 1416-7 paid 5s. to 'a singer to teach the youths' (cantori informanti juvenes). John Brimley after the dissolution became organist and master of the choristers on the new foundation, and though in trouble for taking part in the mass in Durham Cathedral during the rising in the north, retained office till his death, 13 October, 1576, being then seventy-four years old.<sup>3</sup>

It will have been observed that the writer of the Rites speaks as if there were always six novices exactly under the master or tutor. But the number was not in fact constant. We are enabled from 1380 onwards to get some idea of the numbers, by the same means as at Winchester,<sup>4</sup> the presents of knives made to the novices. At Durham these presents appear to have been made only by the Feretrar or shrine-keeper, who yearly gave knives and purses (called *loculis* or *bursis* indifferently). Thus in 1380-1 he paid 2s. 11d. 'for the knives and purses of the novices,' without specifying how many, but in 1383 the number is given 'in eight knives and four purses given to four novices and their masters, 1s. 10d.' The knives were in pairs, so that whenever the number of knives is given, by halving them we find the number in 'school.' In 1387 there were apparently five novices and two masters. In 1409 a list of the monks gives twenty-seven monks and seven novices. In 1423 four novices at once went off to Oxford. In 1445 seven pairs of knives for the novices cost 1s. 7d.; in 1450 six pairs at 4d. a pair, cost 2s., and in 1460 there were five pairs at 3d. each. In 1488 there were five novices. But five, six or even seven boys do not make a school in any ordinary sense, and the monastic or priory school must therefore be regarded as more like a small private collection of parlour boarders than the public school which these schools are commonly reported to have been. Even if it can be called a school, the novices' school did nothing for general education.

### THE ALMONRY SCHOOL

The school in the almonry or infirmary was a much more substantial affair. Let us hear on this again the writer of the Rites.<sup>5</sup>

There were certain poor children, called children of the Almy, who onely were maintained with learning, and relieved with the Almes and benevolence of the whole house, having their meat and drink in a loft, on the north side of the abbey gates. And the said poor children went dayly to school to the Farmary school, without the abbey gates; which school was founded by the priors of the said abbey, and at the charges of the same house, the last school-master's name was called Sir Robert Hartburne, who continued master to the suppression of the house or abbey, and also the said master was bound to say masse twice in the week at Magdalen Chappel nigh Keapeare, and once in the week at a chapple at Kimblesworth. And also the meat and drink, that the aforesaid poor children had, was the meat that the master of the novices and the novices left and reserved, and was carried in at a door adjoyning to the great kitchin window into a little vault in the west end of the Frater house like unto a pantry called the Covie, which had a man that kept it, called the clarke of the Covie, and had a window within it, where one or two of the children did receive their meat and drink of the said clarke, out of the covie or pantry window so called, and the said children did carry it to the Almy or loft, which clarke did wait upon them every mail, and to see that they kept good order.

(When a monk died) :<sup>6</sup> At nyght ys he removed from the dead manes chamber into St. Andrew's chappell, adjoyning to the said chamber and fermery,<sup>7</sup> there to remaine till eight of the clock in the mornyng . . . Two mounckes either in kinned or kyndness the nerest unto him, were appoynted by the prior to be speciall murners, syttinge all nyghte on their kneys at the dead corsses feet. Then were the chyldren of the thaumerey sitting on there knees in stalls of eyther syd the corpes, appoynted to read Davis's spalter all nyght over incessantly till the said our of eight a clock in the mornyng.

<sup>1</sup> *Roger Prior's Rec.* v. 261b.

<sup>2</sup> *Rites of Dur.* 231.

<sup>3</sup> *Rites of Dur.* 91, from MS. L. 1, 656.

<sup>4</sup> *Fulda Ech. (Re. Com.)*, v. 300.

<sup>5</sup> A. F. Leach, *History of Winchester College*.

<sup>6</sup> Roll. C. 1600.

<sup>7</sup> *Ibid.* 51 from Roll of 1600.



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Another task which the Almonry boys performed was the 'dressing, trimming, and making bright' the 'Pascall'<sup>1</sup> or great candle for Easter.

The Valor Ecclesiasticus of 1535<sup>2</sup> sheds more precise light on the Almonry school. From it we learn that the Farmery, which must not be confounded with the monks' infirmary inside the precinct, was for twenty-eight lay brothers and sisters, each of whom received 4s. 7d. a year, or about a penny a week. It was by foundation of Philip, lord of Bromtoft; Gilbert of Laya, lord of Whitton, Adam of Bradbery, Robert 'de Monasterio,' Robert of Amundevill, Roger de Mowbray, and many more. Its exact site we learn from the first receiver's account, or rent book, after the dissolution of the monastery and foundation of the college of canons, that for the year 1541. Under the heading of 'North Bailey, going southwards on the east side of it,' (the original is in Latin) after giving the rental of 'Kynygsgate,' now Bow Lane, it has the following :—

'Entre on the east side of the same (i.e., the North Bailey)

'From a great house (*magna domo*) called the Fermaye with orchard and garden adjacent, yearly.

'From a great room above, where the school was held (*De magno solario supra, ubi tenebatur scola*).

'From the schoolmaster's chamber (*De j camera magistri scole*).

'From the same for a cellar beneath the schoolmaster's chamber (*cellario subtus cameram eiusdem*).'

After two more items comes the statement, 'This is the end both of the South and of the North Bailey.' This fixes the site as that where a lane or 'entry' used to run down towards the river Wear between what is now 28 North Bailey and 1 South Bailey, the beginning of which is now occupied by the stables of the latter, which has recently reverted to educational uses as St. Chad's Hall, the most recent of the halls of the present Durham University. The absence of any sum for rent opposite the items shows that the premises were then unoccupied or at least unlet. The school had clearly ceased, as it is spoken of in the past tense. In 1594 the master's chamber had become 'the usher's chamber (*camera hypodidascali*),' the lodging of the usher of the re-founded grammar school, allowed him rent free, while the cellar underneath was let as early as 1546 to Richard Massam, then to his widow, and in 1594 to his son Robert, who was a lay-clerk or singing man of the cathedral, at 1s. 6d. a year.

The Valor Ecclesiasticus also tells us the number of boys in the Almonry who went to school across the road, in the Outer Infirmary. 'In alms given for maintenance of thirty poor scholars daily in a place called the Almonry (*Elemosinariam*), by the outer gate of the monastery, studying grammar (*artem grammaticalem*) in the school of the monastery, in bread and drink provided by 26 quarters of wheat and 52 quarters of barley malt, £21 13s. 4d.' We have seen, however, that besides this bread and beer they had the broken meats from the novices' table, though meagre fare for thirty boys were the scraps of six or seven novices and one master.

When the school of the Almonry began is not quite clear. It is said in the Valor to be 'of the foundation of the founders aforesaid,' Roger de Mowbray and the rest. By analogy from Canterbury, Winchester, and Westminster, it was probably in the first half of the fourteenth century.

The earliest mention of a master of the Almonry in the extracts from the accounts published by Dr. Fowler is in 1352-3, and this marks the beginning of the school. The roll for 1339-40 shows 'in stipend of priests £8 13s. 4d.,' while that for 1352-3 shows 'in stipends of priests and of the master of the boys of the Almonry, £11 11s. 4d.' The difference between the two suggests the introduction in the interval of the Almonry boys, who were used as choristers, and a master to teach them. In what is perhaps the earliest mention of scholars in the Almonry, though it much more probably refers to scholars in the Public Grammar School, is a deed in the Almonry Register, whereby Richard, bishop of Durham, formerly of Salisbury (i.e. Richard of Bury, 1333-1345), arbitrated between the convent of Durham and the master of Trinity Hospital, Gateshead, about the manor of Kyhou (Kilow), 'formerly given to the Almonry of Durem (Durham) for the maintenance of three clerks,<sup>3</sup> scholars of the school of Durham in the liberal arts, by Mr. Symon of Ferlington, but afterwards given by his brother Henry, the heir of Simon, to Gateshead, for the maintenance of three poor men and a chaplain.' The bishop settled the dispute by letting the hospital keep the manor, paying 40s. a year to the convent.

The priests appear to have been three in number and founded<sup>4</sup> by John de Hamaldune (? Hamilton), who for the souls of himself and others gave lands in Westchuton (Chewton) for the maintenance of three priests, whom the monks were to assign to celebrate daily, one at the altar of St. John the Baptist in St. Oswald's church and to serve the infirm and dead of St. Oswald's Hospital in confessions and funerals; the second to serve in the church of the Lepers' Hospital of St. Mary Magdalen and under the Almoner take care of the lepers there; and the third to minister in the Hospital of St. John the Evangelist before the abbey gate.

<sup>1</sup> *Rites of Dur.* p. 17.

<sup>2</sup> *Valor Eccl.* v. 302-3.

<sup>3</sup> Reg. Elemosinarie, f. 12, 'ad sustentacionem trium clericorum, scolarium scolarum Duncelmensium liberalium arcium.'

<sup>4</sup> Ibid. f. 30, No. 77.

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In 1362-3 the sacrist paid 'to the succentors, the master of the infirmary, the students at Oxford, and the bishop of the Almonry £1 6s.' Other Sacrists' Rolls show that the Oxford, i.e. Durham Hall students, received £1, so that 6s. was paid to the infirmary master and to the boy bishop of the Almonry; which same sum was in 1367-8 paid by the Almoner 'as a pension by the students and master of the infirmary and the bishop of the Almonry.' The boy bishop reigned, on St. Nicholas and Innocents' Day, here no doubt as everywhere else where there was a school or choristers. The accounts of the officers of the monastery show payments of sums varying from 1s. 6d. to 3s. 6d. to the boy bishop (*episcopo puerili*) or the Almonry bishop (*episcopo Elemosinario*) from 1350 downwards.

The Almonry was simply a charity school, and it was started apparently to provide choristers for the Lady Chapel (and perhaps the choir, though it is by no means certain that they ever sang in the choir in the ordinary way) as part of a general movement of the monasteries, at all events the cathedral monasteries, to rival the secular cathedral and collegiate churches by the attractions of a musical service, with the clear trebles of boys instead of the horrid altos of men. To enable the choristers to be efficient they were bound to learn grammar as well as song, and so the Almonry Grammar Schools came into existence. It is not, however, till 1372-3 that the 'master of the boys' is definitely called schoolmaster. In that year the Almoner paid £1 19s. 3d. 'to the schoolmaster of the Almonry (*magister scole elemosinarie*) for his salary, together with a gown (*roba*) bought for him.'

In 1447-8, and subsequent years, 8 pennyworth of bread and beer was found for the boys 'for scattering, tossing, and winning hay' (*dispergentibus, levantibus et lucrantibus fenum*), while in 1456-7 1s. 5d. was paid for beer 'for the scholars and others labouring at getting stones.' Though fed on broken meats they were provided with table cloths; 'two cloths (*mappis*) for the tables of the boys of the Almonry,' costing in 1406-7, 2s. 8d., and a big school table was bought for them in 1436-7 for 10s. They were given meat, too, at the great feasts, 7s. being paid in 1418-9 'for meat (*carnibus*) bought for the Almonry boys at Advent.' When there was a vacancy in the mastership in 1416-7 a schoolmaster was imported from Darlington by the Almoner to teach them (*magistro scholarum<sup>1</sup> venienti de Darlington informanti pueros pro tempore, 14s.*), and in 1500, when the schoolmaster ran away 'through fear of the plague' (*propter metum pestis*)—two of the sisters in the infirmary died of it—somebody else was paid 1s. 8d. by the Almoner to administer the Sacraments to W. Suall and his wife.

The stipend of the master seems to have been raised later. To John Gamer, in 1439-40 (*magistro scholarum grammaticalium*) was paid £2 13s. 4d. for three terms, making his stipend probably £3 for the year, with an allowance for gown and hood, since in 1500 a Sir George Trewhyte, master of the Grammar School (*scole grammaticalis*) (after 1450 there seems to have been a reversion to the use of the singular instead of the plural for a single school), the one who ran away from the plague, received £3 stipend, 10s. for his gown (*toga*) and 11d. for fur for it; and the same amount was paid in 1522. In 1526-7 he also received 6s. 8d. from the master of the infirmary, but this was probably for some special service.

We learn the names of a few of the masters, besides the two above mentioned, from the Sanctuary Book,<sup>2</sup> as on several occasions the master witnessed the entries of those admitted to sanctuary. Thus on 26 July, 1477, the admission of Christopher Brown was witnessed by Edward Bell, notary public, and John Mynsforth, priest, schoolmaster of the abbey of Durham (*magistro scholarum abbatie Dunelmensis*). On 24 August, 1493, Robert Grene of South Shields was admitted before Sir Robert Milner, schoolmaster (*magistro scole grammaticalis*) of the abbey of Durham, while on 27 December, 1510, Sir Cuthbert Marshall, described in the same way, and Thomas Hawghton, literate, were witnesses to two similar admissions. On 19 August, 1515, the admission of Thomas Huchenson of Haydon Bridge (*Hadan Brigs*), husbandman, and his son was, by perhaps more than a coincidence of name, witnessed by Sir John Huchenson, Grammar School master of the abbey and rector of the church in the South Bailey. John Huchenson, without any description attached, appears again as a witness on 25 August, 1521. Sir Robert Hartburne was, as has been seen, the last master.

We may presume, but there is no evidence, that the secular scholars or sizars at Durham College at Oxford, who waited on the monks were, so far as the four to be chosen from Durham were concerned, taken from these Almonry boys.

With the abbey, the almonry, being a part of it, and the almonry school perished. So far as they were choristers, the boys' places were filled by the ten choristers; while so far as they were scholars, their places were taken by the eighteen king's scholars of the new foundation.

<sup>1</sup> This entry, by the way, confirms the inference that there was a Grammar School attached to the collegiate church of Darlington.

<sup>2</sup> *Sanctuary Book Dunelmensis* (Surtees Soc., No. 3).



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## THE PUBLIC GRAMMAR SCHOOL

The true ancestor of the present king's school or cathedral grammar school is neither the novices' no-school nor the almonry charity school (neither of which was in any sense a public school), but the grammar school endowed by Bishop Langley in 1414. This by all analogy existed in some form long before his day, since we find at Canterbury, Winchester, and Worcester a public grammar school, the grammar school of the city, existing outside the monastic precinct, served by secular clergy and under the control not of the monastery but of the archbishop or bishop, from a date 'from whence the memory of man is not to the contrary.' But it was probably not endowed with anything beyond a site and buildings; and the master therefore lived wholly upon fees.

As we have seen, an earlier endowment probably intended for this school was brought to nought by the heir of the donor having bestowed the same charity in another direction. In 1414, Thomas Langley, who on 8 August, 1406, was consecrated bishop of Durham, was Chancellor of England in 1407, and afterwards twice more Chancellor, and became a Cardinal 5 June, 1436, who had already provided a grammar school at his native place, Middleton in Lancashire, founded twin schools of grammar and of song for the city of Durham upon the Palace green, the open space between the castle or palace of the bishopric and his cathedral church.

The foundation of this school has been somewhat misunderstood by the former historians of Durham. On 13 June, 1414, two letters patent addressed to Thomas Neuton<sup>1</sup> and John Thorlby, clerks, were issued, by one of which the bishop, in his spiritual capacity as ordinary, and by the other in his temporal capacity<sup>2</sup> as earl, or at least as having the 'jura regalia' or kingly authority in the county palatine of Durham, authorised them to found two chantries.

The second licence, made in precisely the same form as the royal licences in mortmain, empowered Neuton and Thorlby 'to found a chantry of two chaplains to celebrate divine service at the altar of the Virgin in the cathedral church of Durham,' 'until another honourable and fitting altar is founded by me or by my executors either in the same church or in a chapel to be newly built in honour of the Virgin Mary near the same church' for the good estate and for the souls mentioned in the other licence 'according to an ordinance to be made by the said Thomas and John.' Further, the chaplains were made a corporation, and a rent of 6 marks (£4) issuing from certain lands specified in 'Herdewyk,' Ryton, Boldon, Whitburn, Cashop and 'Owangate' in the North Bailey of Durham, held of the bishop in chief.

Next day, 14 July, 1414, Neuton and Thorlby executed the ordinance which the licences empowered them to make. It recited how they thought it a work of mercy (*pium opus*),<sup>3</sup> and deserving reward from God 'to found perpetual chantries and to prefer thereto persons who are praiseworthy for the uprightness of their life and conduct; competently instructed in grammar and song (*litteratura et cantu competenter edoctos*) so that they may not only render themselves sufficient and scrupulous in divine service, but may know how to mould others how to serve in the church of God, and bring forth fruit pleasing to God in due season.' So from 'the property given them by God (*debonisa Deo collatis*)' they proceeded to found a perpetual chantry of two chaplains in the words of the licences, and appointed Mr. William Browne and Sir John Clayton, priests, to be the first chaplains, directing them and their successors to pray for the souls already specified 'according to our ordinance noted below and as the said Thomas, bishop of Durham, shall think fit to add' to enjoy the endowment of 6 marks 'trusting that the said reverend father and other Christ's faithful people moved by pity will lend helping hands to the chantry aforesaid, as we according as our means allow intend to provide further for it.' They also ordained 'that the chaplains aforesaid there, shall, when so disposed, celebrate mass and say daily the canonical hours, viz., the office of the day and of the Blessed Virgin and the exequies of the dead, as beneficed persons in holy orders (*curati et in sacris ordinibus constituti*) are accustomed to do, according to the Sarum Ordinal and the use (*observanciam*) in the diocese of Durham.' Then appears the real object of the foundation. The chaplains were to be 'sufficiently advanced<sup>4</sup> and instructed, one in grammar, the other in song, so that one may know how to keep school in grammar, the other in song, in the city of Durham, and sufficiently to teach, instruct and

<sup>1</sup> Neuton was a canon of Darlington, having exchanged his prebend in the collegiate church of Bridgnorth for one in Darlington in 1407; while Thorlby was made dean of the collegiate church of Chester le Street, 6 April, 1408 (*Dur. Epis. Reg. Langley*, f. 136 and 146). Neuton was also master of a hospital at Gateshead, of which place Thorlby was rector.

<sup>2</sup> A full account is given of the ordinance by Mr. G. B. M. Coore in the Report of the Charity Commissioners on the charities of Durham and suburbs (*Parl. Papers*, 1900, 200, p. 27) from the transcripts made by me.

<sup>3</sup> This rather than 'pious' seems to be the proper translation.

<sup>4</sup> *Capellani in cantaria predicta intitulandi sint, unus in grammatica, alter in cantu, ita sufficienter proveci et instructi, quod unus eorum scolas in grammatica, alter in cantu in civitate dunelmie sciat regere, juvenesque et alios indoctos in huiusmodi scienciis sufficienter instruere et proinde informare.*

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inform youths and others untaught in such learning,' and they were to be 'perpetually bound<sup>1</sup> to keep school, one in grammar and the other in song in the city of Durham, in such places as may be assigned by Lord Thomas, the bishop, or his executors, and to diligently teach and instruct all willing to learn or study under them in the said sciences, the poor indeed freely (*gratis*) for the love of God, if they or their parents have humbly asked for this, but taking from those who by themselves or their friends are willing to pay the moderate fees accustomed to be paid in other grammar or song schools.'

Still more remarkable for those who confuse the Grammar Schools with schools merely to teach choristers the minimum of psalm singing is the next provision that 'the chaplain who teaches the song-school shall be bound to be present in person with a competent number of his scholars, and to sing in the mass of the Blessed Virgin when celebrated with note in the church of Durham or in the chapels aforesaid, but he who keeps the grammar school is only bound to attend there on Sundays and feast-days.' This is exactly parallel to the arrangements at Winchester College, where the Song Schoolmaster and the choristers had to attend the services daily, while the headmaster of the Grammar School and the scholars only attended on high days and holidays.

The two schoolmasters were to live together 'in the same manse (manso) or house assigned to them by the bishop in the city of Durham' to have forty days' leave of absence in the year, but never to be absent both at one time, 'and always to leave a sufficient substitute to keep the schools aforesaid in their absence, and duly teach and inform the scholars' for whom, as usual at this time, no holidays seem to be contemplated. The usual provisions against playing forbidden games, frequenting taverns, and female society follow. Their appointment was vested in the bishop, who was to have unlimited power during his life of altering or abrogating the statutes and making new ones. This, coupled with the fact that his soul and the souls of his parents and benefactors and not those of Neuton and Thoraby were to be prayed for, is sufficient proof that the endowment as well as the foundation really came from the bishop, and that they were only his agents in the foundation, interpolated probably because of the awkwardness of giving licences to himself. To make all safe, the whole was confirmed by the king 18 July, 1414.

It is clear from the terms of the Ordinance that Langley intended to give further endowment to the schools than the mere £2 a year each, which was in fact paid out of the episcopal revenues, and one of which sums, representing the Grammar School master's stipend, is still paid by the Ecclesiastical Commissioners in respect of the episcopal estates. But no other endowment seems in fact to have been given during Langley's life. William Brown, the first Grammar School master on this foundation left the school for the deanery of the collegiate church of Lanchester only two years afterwards,<sup>2</sup> and was succeeded by John Artays or Ortas 'priest and master in grammar'—there were then degrees in grammar given at the Universities—appointed by Langley himself 13 May, 1416. Three years later, 1419, Artays, besides his stipend of £2, paid as usual by W. Chancellor, the bishop's temporal chancellor, receiver, and constable, on the bishop's warrant, received £4 13s. 4d. more from the constable<sup>3</sup> 'in recompense made for certain poor scholars of the said lord bishop, taught by him without receiving anything for their fee.' In the same year £2 13s. 4d. was paid 'to William son of John Ingleby, studying at Oxford, granted by the bishop's warrant to be paid him yearly as long as the lord pleased for his maintenance (ad exhibicionem suam).' This school therefore contributed undergraduates to Oxford quite independently of Durham College.

In 1424-5<sup>4</sup> the Auditors' Rolls show Artays as still receiving £4 13s. 4d. besides the endowment of 40s. When Langley died, 20 November, 1437, no further endowment had been added. By will, however, 21 December 1436, he directed his executors to purchase an endowment for the school, and on 1 February, 1438, Robert Neville, the succeeding bishop, granted them licence to acquire lands to the value of £40 a year and grant them to John Artays and Robert Southaryn (otherwise called Southeron), 'chaplains of the chantry of the Blessed Mary and St. Cuthbert in the chapel called the Galilee in the church of Durham.' Here under a splendid slab of marble reposes the cardinal-bishop himself, and from it the chantry was called 'the marble chantry.'<sup>5</sup> After Langley's death the prior and convent raised the claim that the original foundation deed of Langley required their consent, as it undoubtedly did, if the £4 annuity was really a charge

<sup>1</sup> 'Capellani predicti . . . perpetuo teneantur, unus scilicet in grammatica, alius in cantu infra dictam ecclesiam, in loco ad hoc eis per Dominum Thomam episcopum supradictum vel ejus executores assignandis, scholas regere, et quoscunque sub eis in dictis scienciis addiscere vel studere volentes diligenter instruere et docere, pauperes quidem gratis pro Deo, si hoc ipsi vel parentes sui pro amore Dei humiliter petierint; ab illis autem, qui per se vel amicos suos solvere voluerunt, recipiendo stipendia moderata in aliis illis meritis vel cantibus solvi conueta.'

<sup>2</sup> M. Brown, M. f. 59. This is a collection in the Chapter Library formed by James Mickleton, chapter Registrar after the Civil War.

<sup>3</sup> Mickleton quoting the Auditor's Roll, 14 Langley.

<sup>4</sup> Mickleton. Hutchinson, *History*, ii. 335.

<sup>5</sup> Hutchinson, ii. 272.



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on episcopal revenues, and not merely a charge on lands bought by the bishop and presented to the see. However, the convent executed a deed of confirmation for which they insisted on a *quid pro quo*. For while reciting that they 'sincerely embraced and greatly commended in the Lord the devout purpose of the ordainers concerning the instruction and progress of those wishing to study in grammar and song, as tending to the praise and honour of God, the increase of divine worship and the benefit of ourselves and the whole country, and for the intimate love which we bear to the soul of the said late Bishop Thomas as in duty bound, at the special request of his executors, from whose goods charges and expenses the said chantry is already partly endowed and is to be enlarged by more ample endowment in the future' they granted that 'the chaplains may celebrate at the principal altar of the Blessed Virgin . . . where the aforesaid Thomas has chosen his place of burial, and has restored it sumptuously with large outpouring of his wealth,' but only subject to the conditions that (1) the chantry priests were to arrange their masses so as not to interfere with the daily Lady Mass celebrated by the monks at the same altar; (2) that they should have no right of entrance to the chapel except when the church was open to the public, nor have or claim the right to any particular place or stall in the church or chapel; and (3) that besides<sup>1</sup> the scholars on Langley's foundation 'they shall be bound to teach and instruct the thirty persons supported and maintained in the Almonry of the cathedral church freely, exacting nothing from them, as and when such persons shall be presented for this purpose to the aforesaid chaplains by the Prior of the cathedral church aforesaid, within the number aforesaid' and (4) 'that the chaplain of the Song School ("qui scolas regit in cantu") shall be bound to be present in the choir of the Cathedral on every principal and double feast at the time of high mass and both first and second Vespers, robed in a surplice, and to sing, if given notice beforehand by the Prior'; (5) that neither of them shall bring any action against the Prior and monks.

This deed reveals a design of relieving the monastery of providing masters to teach the Almonry boys and planting them on the city school. But it seems doubtful whether it took effect, since the names of the masters of the 'Abbey School' or Almonry School do not correspond with those of the 'City School' or Langley's School, except in one case, that of John Hutchinson, who appears as one of the two chantry-priest schoolmasters in 1510, and is apparently the same person who as Grammar Schoolmaster of the Abbey witnessed the admission of sanctuary men in 1515 and 1521. But it is probable that he passed from the Grammar School to the Almonry School, when he obtained the rectory of the South Bailey church, which made him ineligible to remain one of Langley's schoolmasters. The rectory and the Almonry schoolmastership together were no doubt better than the city mastership alone.

Langley's executors are said by Hutchinson<sup>2</sup> to have bought the manor of Kevardeley in Lancashire and to have assigned £16 13s. 4d. a year to the schoolmasters out of the rents. But it appears from the licence, 1 October, 1440, to Nicholas Hulme, Richard Bulkley and John Snawdun, clerks, to purchase and grant it to John Artays and Robert Sotheryn, that the purchase was of a rent-charge (*annualet redditum*) only, and so was fixed for all time. In return for it the chaplains had at Langley's Obit on 20 November to distribute, by the oversight of the prior, 13s. 4d. among forty poor and indigent persons to pray for the founder.

The increase of endowment at the time was substantial and brought the pay of the masters to £10 a year, the same as that of the headmaster of Winchester; but the latter was boarded and clothed as well, and took, as the Durham masters did, the fees of commoners. Artays enjoyed the new endowment for some four years, dying 22 August, 1442. Sotheron, the song schoolmaster, is put first in the records of payment in 1453-4, Robert Grene being the other chaplain; but he was put first by virtue of seniority as chaplain, not as having become grammar schoolmaster or headmaster. These two remained in office until 1463-4, when Robert Grene was succeeded by John Spicer, in 1465-6 by Nicholas Kelchith, and in 1477 by Hugh Forster. They are unhappily mere names. The space left after Forster by Mickleton may be partially filled by inserting about 1495 John Claymond,<sup>3</sup> re-elected a demy of Magdalen College, Oxford, in 1485, and afterwards President, leaving the office to become the first President of Corpus Christi College. According to Claymond's biographer in Latin verse, when Foxe, the founder of the latter college, became bishop of Durham, which was in Dec. 1494, he immediately sent for Claymond, 'and promising a large salary set him over the boys whom that land holds to dip their tender tongues in Roman river, and banish their Scythian accent.' He was made vicar of Norton in 1498, for scholars from which place he established two scholarships at Brasenose College by his will 6 June 1537, and master of Staindrop collegiate church in 1500. In 1510 John Hotchinson was the grammar schoolmaster, and as we have seen became almonry schoolmaster; William Dossy being song schoolmaster. In 1511 Thomas Sanderson and Edward Watson were the two masters. The

<sup>1</sup> 'Et 30 personas in elemosinaria ecclesie cathedralis predicte sustentendas et exhibendas in scienciis predictis, libere, nichil ab eis exigendo.'

<sup>2</sup> ii. 472.

<sup>3</sup> *History of Corpus Christi College, Oxford*, by Dr. Fowler, Oxford Historical Society.

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latter is certainly the Edward Watson who became a Bachelor of Grammar at Oxford on 18 March, 1512.<sup>1</sup> He was succeeded in 1520 by George Fowbray; and Sanderson in 1525 by William Coky or Cockey, probably the same as William Cokke or Cockey who took his B.A. degree at Oxford 10 March, 1516.<sup>2</sup> At the time of the *Valor Ecclesiasticus*, 1535, William Coky and Ralph Todd were the chaplains. Of these Cockey was the song schoolmaster and still remained so at the time of the dissolution of chantries in 1548. Todd, who was an Oxford man, B.C.L. 11 July, 1519,<sup>3</sup> was succeeded by Henry Stafford, who was the grammar schoolmaster at the time of the dissolution of the 'Abbey' or cathedral monastery in 1540. He was a Durham boy, who became fellow of Corpus Christi College, Oxford, 16 June, 1528; B.A., 23 June, 1531; M.A., 5 May, 1534.<sup>4</sup>

The monastery was surrendered by the prior and monks, 31 December, 1540. On 12 May, 1541, it was re-founded as a cathedral church, and four days afterwards, 16 May, was re-endowed by Henry VIII. On 28 May, a commission issued to Sir Thomas Hilton and Sir Ralph Hedworth, knights, and others, to assign houses to the newly-created dean, chapter and other members of the church, including the master of the choristers and 10 choristers, and the headmaster, undermaster, and 18 scholars of the Grammar School. Unfortunately the deed of foundation and statutes, if any, as undoubtedly there must have been by him, and the instrument assigning of houses have disappeared. The existing statutes of Durham Cathedral are dated 20 March, 1 and 2 Philip and Mary, and were made by Nicholas Heath, archbishop of York, Edmund Bonner, bishop of London, Cuthbert Tunstall, bishop of Durham, Thomas, bishop of Ely, and William Ermysted, a royal chaplain, and grammar school founder. With the exception of a few words inserted about 'sane and catholic faith' these statutes almost exactly repeat the Henrician statutes of the cathedrals. They provide (cap. 5) for a master (magister) of the choristers and ten choristers, and two masters (*Informatores*, the term in use at Winchester and Eton) of boys in grammar, of whom one is to be preceptor and the other sub-preceptor, and eighteen boys to be taught grammar (in *grammatica erudiendi*). These masters and the eighteen grammar boys (*grammaticales pueri*) were to be elected by the dean and chapter 'as is before prescribed and ordained in the letters of foundation of the cathedral.'

Chapter twenty-eight deals with the school in detail to say:—

In order that piety and good learning (*literæ*) may for ever bud, grow, and flower in the said church and in due season bear fruit for its adornment, we order and decree that there be for ever in the church of Durham eighteen boys, poor and destitute of the help of friends (*pauperes et amicorum ope destituti*), to be nourished on the goods of the church, and so far as possible with native talents fit for learning (*ingeniis ad discendum nati et apti*); and we would not that they should be admitted poor boys of the cathedral church of Durham before they know how to read, write, and, in the judgment of the Dean,<sup>5</sup> have a fair knowledge of the rudiments of grammar. These boys we will shall be brought up at the expense of the church until they have gained a fair knowledge of Latin grammar and have learnt to speak and write Latin, for which a period of four years, or, if the Dean<sup>5</sup> see fit, five at most and not more shall be allowed.

The scholars were not to be admitted after fourteen, except choristers, who might be admitted up to fifteen, and who, 'if they are fit and prove proficient in music and having well served the choir, we wish to be preferred to others.' If any boy turned out remarkably slow and stupid or naturally unfit for learning, he, after long trial was to be expelled 'that he may not like a drone consume the bees' honey,' and the conscience of the masters was solemnly charged to use their best diligence to get all the boys on, and not to suffer any of the drones to linger uselessly among the rest—but straightway report him to the dean so that another might be admitted in his place.

The headmaster was 'to know Latin and Greek, to be of good repute, sound faith,<sup>6</sup> and pious life, with a faculty for teaching. He shall cultivate religion and adorn with learning not only the 18 boys of the church aforesaid but all other whomsoever coming to our school for the sake of learning grammar.'

The second master (*hypodidasclus* sive *secundarius informator*) was only required to know Latin, not Greek, and to teach the rules of Grammar under the *Archididasclus*. The rules and authors and order of teaching were to be such as the dean and chapter with the consent of the

<sup>1</sup> Register of the University of Oxford, p. 89. Edited by C. W. Boase, Oxford Historical Society, 1885.

<sup>2</sup> *Ibid.* 97.

<sup>3</sup> *Ibid.* 110.

<sup>4</sup> *Ibid.*

<sup>5</sup> In the Henrician statutes this runs 'dean or headmaster.' The omission of the headmaster, who was the best judge, seems to be due to the ecclesiastical reaction prevailing.

<sup>6</sup> This *sane fidei* is a Marian interpolation, not in the Henrician statutes. *Statuimus preterea ut unus eligatur, Latine et Græcè doctus, bonæ fidei et vitæ piæ, docendi facultate imbutus, qui tam 18 illos quam ceteros noster pueros quam alios quosunque grammaticam discendi gratia ad scholam nostram confluentes præstatè exornatos et bonis literis exornat. Ille in schola nostra primas obtineat et archididasclus sive Præcipuus Informator esto.*



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bishop<sup>1</sup> prescribed. The masters might be removed after three warnings for idleness or negligence or failure to teach well (*si minus ad docendum apti inveniantur*). It is noteworthy that there is absolutely no requirement that the masters should be in orders. As a matter of fact we know that many, perhaps the majority of the grammar school masters, even at Winchester and Eton, at this time and earlier and later, were not priests or even in orders, but were married men, laymen, and in several cases, doctors, sometimes of medicine, but generally of law, and rarely of theology. For the choristers it was only required that they should be of tender age and of sounding voices fit for singing. Their master was to be skilled in singing and organ beating (*organa pulsandi*). He did not have to attend choir on ordinary week days (*ferilis simplicibus*), when his place might be taken by a lay clerk, but was bound to attend on Sundays and double and simple feasts.

Neither the masters of the grammar school nor the grammar school boys were required to take part in the services at all, or even to attend them. It was well recognised then, as in Langley's time, that attendance at services on whole school days was quite incompatible with progress in learning. Incidentally, however, we learn that stalls were provided for them in the cathedral. They were boarded as well as taught. 'That those who come together and praise God together in choir may also sit together and praise God together at table, we order that as well all ministers of the church in the choir as the teacher of the grammar boys . . . the boys too learning music and grammar . . . shall sit together and dine in a common hall.' The precentor presided at the high table, next in rank came the headmaster, then the minor canons, just as at Winchester the headmaster ranked next after the warden and before the fellows. At the second table came the deacon and sub-deacon, named Epistoler and Gospeller, second master and lay clerks. At the third the grammar boys and choristers. The choristers were therefore promoted in the social scale; they no longer, as did the almonry choristers, dined on the broken meats of the novices. The amount allowed for commons was: headmaster and choirmaster, 1s. 6d. a week, under master 1s. 2d. a week, boys, 10d. a week. Not only did the masters and eighteen scholars get board and lodging, but clothes also for livery, the headmaster having 4 yards of cloth, the choirmaster 3 yards at 9s. a yard, the second master 3 yards at 4s. 6d. a yard, and the boys, scholars and choristers, 2 yards and a half at 3s. 4d. a yard. The stipends were £10 each for the headmaster and the choirmaster, the canons getting £33 6s. 8d., and minor canons £10 each; the second master £6 13s. 4d. the same as the Gospeller and lay clerks; the grammar boys and choristers £3 6s. 8d. each. Leaving exhibitions were provided in the Henrician foundation; but in 1544 a new arrangement was made by which the chapter surrendered to the king a part of its revenues, including Durham College and its possessions, and was relieved of its University obligations. So that when the Marian statutes were made this very important adjunct of a school had disappeared.

Fortunately we are able to attach the new school of Henry VIII. quite definitely to the old school of Langley. For according to a MS. of Bishop Cosin's, Henry Stafford, who was, as we saw, the grammar schoolmaster of Langley's school, became the first headmaster of the new Cathedral Grammar or King's School, and retained, as did all his successors, until a foolish attempt was made by Bishop Cosin after the Restoration to deprive him of it, the house and salary and schoolhouse of Langley's foundation. Robert Hartburn, the last master of the Almonry Grammar School, became first second master of the same school, while John Brimley, the master of the choristers of the Almonry, became the first choristers' master and organist of the cathedral church. Hartburn appears to have succeeded Stafford in the headmastership. For the return of the Chantry Commissioners,<sup>2</sup> made between 14 February and June 1546, states that 'the Chauntrie of Our Lady and Saint Cuthbert was founded by one Thomas Langley, somtyme bishop of Durham, to fynde 2 priestes to pray for sowles, and also to kepe 2 free scooles, the one of gramer and the other of songe, in the citie of Durham, for all maner of children that should repayre to the said scooles,' and that the income was gross £20 13s. 4d., and net £15 0s. 4d., 'whiche Robert Hartburn and William Cockey, priestes, incumbents of the same, keypyng two scooles in maner and form aforesaid, have yerely for their stipendes.'

The Grammar School was in accordance with the Chantries Act continued by a warrant of the Chantry commissioners, Sir Walter Mildmay and Robert Keylway, appointed for that purpose.<sup>3</sup> Though the original warrant has disappeared, this appears from the payment by the Receiver General of the Northern Counties in 1548-9, under the heading 'Bishopric of Durham. Payments, stipends, and wages of schoolmasters.' Out of the lands and possessions belonging to the manor of Kevedley, in Lancashire, belonging to the possessions of the late monastery of Jarvax,

In the yearly stipend or wages (*salario*) of Robert Hartburn and William Cokaye, masters of the Grammar School, founded by the late chantry of B.V.M. and St. Cuthbert in the cathedral church of Durham at £16 a year, and 13s. 4d. to be distributed by them amongst the poor according to the foundation of the said late chantry, viz., in such allowance by virtue of a warrant of Walter Mildmay, knight, signed by his hand for a year and a half ending at Michaelmas in the third year of Edward VI. £25.

<sup>1</sup> The consent of the bishop is a Marian interpolation.

<sup>2</sup> See my *English Schools at the Reformation*, pt. ii. p. 60.

<sup>3</sup> P.R.O. Mins. Acc. 2-3 Edw. VI. No. 88, f. 44.



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The Song School was, unlike other Song Schools, which were abolished, preserved in virtue of its close connection with the Grammar School, to which no doubt, like other Song Schools, it had acted, and now more than ever acted, as a Preparatory School, the payment being treated as a single one to two masters.

Unfortunately there is no other minister's account of the Durham payments preserved until the year 1574-5, when John Clifton, then Receiver-General, made the payment of £16 13s. 4d. to Robert Cooke, who, as will be seen, was the headmaster of the Cathedral School, and to Thomas Harryson, who, as we learn from the episcopal records, received the annuity of £2 charged on the episcopal revenues as the master of the school of singing boys, and was also paid as a lay singer in the cathedral. We may here dispose of the fortunes of the Song School. The appointment of John Rangell, 27 September, 1582,<sup>1</sup> shows that it was then a preparatory and elementary school: 'Whereas Thomas Harrison, singing man, by the appointment of Antony Row, Esq., late Her Majesty's Auditor in the North parts, and John Clifton, Her Majesty's Receiver, did exercise the room and place of keeping school for bringing up of young children to be instructed in the catechism and further made fit to go to the Grammar School: and likewise to be taught their plain song and to be entered in their prick song,' they appointed John Rangell 'to occupy and have the same school with the annual stipend thereto belonging in as ample manner and form as the afore-said Thomas Harrison enjoyed them.' Rangell held for no less than forty years, dying on 8 January, 1622. After a short tenure by Robert Maland, 1622-7, it was held by Mark Leonards, a minor canon and vicar of Monks' Hasleden, 'under whom officiated in the school afore-said, John Pattison, who was one of the aldermen and mayor of the city of Durham, 1608, and afterwards in his old age, having become poor, became teacher about 1630, and taught the school, viz., to read and write, and was called master of the petties school of the city (schola puerilis civitatis Dunelmie).' He was succeeded by Thomas Wanlesse or Wandlyss, son of Edward Wandlesse, alderman of Durham, also a minor canon, who was carried off and imprisoned at Hull. 'Under him,' from 1639, 'Samuel Martin, lay clerk, was master of the school (parvae, i.e. le petit school),' and was the first schoolmaster of John Mickleton, the Registrar, who tells the story, before he went to the Grammar School, Martin 'was not a singer nor in any way skilled in the art of music.' He continued throughout the Civil War and till Cosin's attempted revolution, to be hereafter noticed.

There is no evidence forthcoming as to the Grammar School and its masters from 1548 to about 1560, the Chapter Act books and the Treasurer's books and all other documents of the time having disappeared. Of the earliest extant Treasurer's book the date can only be guessed, as the first leaves are gone; but it is probably of the year 1561, as Adam Holyday appears as a canon, and he only became one in December, 1560. The master was Thomas Reve, probably the man of that name who took his B.A. degree at Oxford 4 February, 1541,<sup>2</sup> and the under-master Thomas Iveson, while John Brimley was still master of the choristers. The names of the choristers and Queen's scholars are given, and they show that the preference of choristers for admission to the Grammar School was not a mere form. For two names of scholars are crossed out and other names written over, and one of the new names is that of Robert Massam, which is crossed out in the list of choristers. He was afterwards for many years a lay singer (cantator laicus), and another, Robert Massam, probably a son, headed the list of choristers in 1599. The other new scholar in this book was Christopher Grene, who in the Treasurer's book some 16 years later appears as second master. The name of William Holyday among the scholars suggests that the canons put in their relations, Adam Holyday being then the prebendary of the twelfth stall. Christopher Watson and Anthony Dobson among the scholars suggest relationship with Robert Watson and George Dobson among the choristers. The next book, that of 1580, enables us to see that the promotion of choristers to be scholars was the regular thing. Of ten choristers in 1577 four were still choristers in 1580, one is unaccounted for, but five, that is half the whole number, had already become scholars. One of them, John Tunstall, headed the list of scholars ten years later, as William Tunstall, probably a brother, did in 1577. Both were no doubt sons or nephews of Ralph Tunstall, a canon, and of the family of the bishop. A Toby Tunstall was a King's scholar in 1609. The promotion of choristers to King's scholars seems to have been a regular practice down to the Civil War, when choristers ceased, but does not appear to have been resumed after the Restoration. A curious entry in the 1577 account is found 'to the queresters to bye ther paper, iis. vid.'

Robert Cooke succeeded to the Headmastership in 1568 and held office for eleven years, and was buried in the cathedral 20 November, 1579. How he managed it is hard to see, for he was 'libelled,'<sup>3</sup> before the archdeacon, apparently for having married his deceased wife's sister, Margery Proctor, alias Linze, at Mamble Church, Herefordshire, on 25 April, 1568, four months after his first wife's death, and fled to Durham for secrecy, where he lived in the North Bailey. The evidence adduced is apparently irrefutable, but must be taken to have been refuted. In the Treasurer's book for 1577-8, Christopher Grene appears as usher. He was also in 1578 incum-

<sup>1</sup> Hunter's MS. 13 f. 56.

<sup>2</sup> Reg. Oxon. 193.

<sup>3</sup> Hunter's MS. 13, f. 60.



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bent of St. Nicholas and of St. Mary Magdalen Chapel in Gillygate.<sup>1</sup> Under him the school received one of its few benefactions, William Birche, 'pastor,' of Stanhope, bequeathing by his will 29 May, 1575, 'to the porest Schollers of the Lattin Speiche in the Grammar Scholle in Durham and Houghton, 40s., to twenty, 2s. a piece.'<sup>2</sup> He and Robert Cooke the headmaster appeared at the visitation of the parish of North Bailey, 3 February, 1578.

Francis Kaye or Key was admitted Headmaster on 22 March, 1580, 'to enter into his wages from Christmas last past.'<sup>3</sup>

On 28 June, 1580, the vice-dean warned him 'to conforme himself accordinge to the statutes and caused him to take his corporal othe for obedience to the Deane and Chapitre.' Apparently the subject of disobedience was the common table, as 'the same day the said Vice-Deane admonished Mr. Blenkinsoppe, peticanone, Robert Prentys, Thomas Lytle, Mr. Grene, and Mr. Francis Kaye to kepe house together as the Pety canons are bound to doo, and that they should make ther answer within the fortnight, and the said Mr. Vice-Deane promised them that they should have the tiethe corne of Dalton towards ther housekeepinge.' With the usual irregularity of these Chapter Act books there is no entry as to the answer; and we do not know whether the joint household was established and maintained or not, or for how long. Next year we find Mr. Kaye was given £3 6s. 8d. 'of our benevolence' by the chapter 'towards his proceedinge in Cambridge' to his M.A. degree presumably. 'Also it is decreed that the said Mr. Key shall grant no libertie to the schollers to plaie without commandement of the Deane, Vice-Deane, and senior Residentiary, or at the least at the sute of some Prebendarye.' Cuthbert Nichols, the usher, who succeeded Grene about 1587, is probably the person who appears as a notary public to examine the churchwardens of St. Nicholas, Newcastle, on 12 April, 1578, and was the sub-deacon or reader of the Epistle in the cathedral in 1580, and combined the ushership with that office. Mr. Kay went off to be vicar of Northallerton, where he is buried, in 1593. James Calfhill, M.A., of Christ Church, Oxford, and probably a son or nephew of Dr. Calfhill, Lady Margaret Professor of Divinity there, came next. He combined the vicarage of St. Oswald's with the headmastership. He has been confused by some Durham historians with John Calfeld, who may or may not have been a relation, for the spelling of the surnames seems to wander about between Calfhill and Calfeld; but the Christian names are distinct, and John, who was some six or seven years James's junior at Christchurch, became a canon of Durham in 1607. Robert Bowlton or Bolton became second-master under Calfhill.

The Dean, Tobie Matthew, and the chapter seem to have taken the opportunity of the change in the headmastership, or perhaps to have been compelled by the bishop, Matthew Hutton, to make statutes<sup>4</sup> 20 November, 1593, approved by the bishop 'in his visitation holden and ended the 29th daie of the said month (November) in the said year.' They are called 'Orders for the schoole of Duresme.' They begin 'Ordered for the Schoole Maister,' and the first order is, according to a marginal note, 'The religion and hability of the schoolemaister.' 'First and principally because that an unlearned schoolemaister cannot make a learned scholer; therefore it is ordered that the schoolemaister shalbe furnished both in the Greake and Latin tongues, fully able to discharge his dutye: which shalbe both a honest man in conversation and also a zealous and a sound professor of true religion abhorring all papistrie.' 'The planting of true religion in the schollers' was to be done by 'weekely' lessons and also by making them 'gett by heart some short catechism allowed by authoritie' and 'note the sermons; which schoolemaister shall appose them, upon Frydaie after, in the same.'

The school hours were laid down as 7 to 11 a.m. and 12.45 to 5 p.m., and a 'cheif monyter' was to be appointed to note the names of late comers 'which he shall deliver to the schoolemaister upon Fridaie . . . and the maister to correct all such as shalbe founde culpable.' Friday was the regular day in schools for expiating in blood all the offences of the week. The master was to teach 'grammar, being the principles of the Lating tonge, as the schollers shall and may understand everie point thereof . . . by often and dailie appositions in the said schoole, teaching the schollers to varie diverse and sundrie grammar rules, by making of their owne mind some short dictamen of everie grammer rule.' They were to 'have perfectly by heart every rule contayned in the king's grammer.' As soon as any boy had 'any perceyving' in Latin he was to 'make one epistle weekly and everie weeke of his own mind both in matter and words . . . according to the principles of Erasmus or Ludovicus Vives in their books De scribendis, which shall be showed . . . upon Saturday.' Next he was to learn to make 'a theame according to the precepts of Aphthonius.' Thirdly, . . . 'he shall have redd unto him the bookes of Cicero ad Heremium, wherein the schoolemaister shall teach the schollers to frame and make an oration according to the precepts of Rhetorick . . . thus: the schoolemaister shall propound a theame or argument which shall have

<sup>1</sup> Bp. Barnes's *Eccles. Proc.* 46, 47, 73, 96 (Surtees Soc. No. 22, 1850).

<sup>2</sup> *Ibid.* App. cxi.

<sup>3</sup> Chapter Act Book G. 1578-83, marked 1567, but p. 49, which is the first page, is for 1587-8.

<sup>4</sup> They are preserved in a MS. book O. p. 154, kindly lent me by Mr. F. Bacon Frank, of Campsall Hall, near Doncaster.

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two parties, and two schollers shall be appointed, the one shall take the first part, the other the second . . . and upon Saturday . . . shall shew their orations . . . Against Saturday in the weeke following the foresaid schollers shall pronounce . . . by heart their said orations . . . publicly in the face of the whole schoole and this . . . to contynue weekly throughout the whole yeare among the best schollers.' 'Fourthlie, for the practise and exercise of versifying . . . the schoolemaister shall read to them the versifying rules sett downe in the latter end of our common grammer . . . with due teaching . . . the true . . . skaning of a verse, for practise whereof the schollers shall every second daie make certaine verses upon certaine argument which shalbe given them.'<sup>1</sup>

Writing was not neglected. 'For the better exercising of Greake, Romaine and Secretarie hands; . . . wekely . . . those schollers which write the best shall give examples . . . to the inferiours and . . . upon Saturday' which was a regular dies irae—'the schoolemaister shall command every scholler . . . to write presently certaine lines in all the foresaid handes.' Two judges being chosen 'everie boy . . . shall deliver in his penn . . . with the paper . . . to the judges . . . They shall choise out of everie forme one boy which writeth the best, and that scholler shall receyve the pennis and papers of all his fellows in that forme.' What use the pens and papers were to the winner does not appear.

Sixthly came Greek. The boys when they had read the grammar 'with a pearte of some author,' were 'to frame a Greke epistle, and utter a Greke verse.' 'And further because Socrates saith the love and commendacion of praise is a great spurr unto a scholler to stirr him to vertue,' therefore once a quarter the master was to propound an 'argument or theam' wherein 'everie scholler which is able shall make epistles, theames, orations, verses Latin and Greke,' and 'the schoolemaister shall place that scholler which hath the best epistle, theame, oration, verse Latin or Greke in the cheifest or best state of that forme in the which he remaineth.'

The holidays or 'times for bricking up' were from 24 December to the day after Twelfth Day; Wednesday before Easter to Monday after Low Sunday; and Wednesday before Whitsunday to Monday after Trinity Monday. But the boys were to prepare themes for breaking-up day and had holiday tasks 'to repaire to the schoole after the breaking up twice everie daie' from 8 to 9 a.m. and 2 to 3 p.m. 'to repeate such things as the schoolemaister shall think profitable for their better proceeding.'

An enormous list of authors to be read is given from 'Cato, Colloquia Erasmi and Mr. Nowell's Catechism' to Cicero, Livy, Ovid, Horace, Virgil, Lucan; and in Greek, Homer, Hesiod, Demosthenes, and Isocrates. Among more recondite books mentioned may be noted 'For recreation's sake the epistles of Mr. Acham (Roger Ascham) or Paulus Manutius . . . For the phigures of grammar Susenbrotus, for historiographers Austin . . . Mantuan and Palangonius . . . for Greke poetts . . . Theognis or Phocilides.'

Among the 'statutes for the schollers' is the usual requirement to 'use the Latin tongue in and about the schoole.' And to be obedient to the 'preposetors.' Prefects are still called prepositors at Eton. A quaint prohibition to modern manners is that 'they shall use in or nere the schoole noe wapons, as dagger, sword, or staffe, cudgell or such like.'

Two years later, 20 November, 1595, there was a very fierce chapter order against the 'intollerable disorder used by the schollers of the foundation of this church and others of this cittie and countie, in breaking up, as they terme it, of this schoole, to a seditious and perillous example of other elder folkes.' After setting out the days on which the masters were to 'demise the schollers' it was ordered that 'if any scholler or chorister . . . shall presume to shutt the schoole doore or windows, or help to keep it or them shutt, or assist or consent thereto for the keeping out of the schoolemaister, usher or any governoure or officer of this church, or to that purpose shall weare any weapon or use any force . . . or shall not . . . avoid all such contemptuous and undecent manner of dealing' he shall lose his scholarship or be removed, as 'seditious and unfitt.'

After Calfhill's departure in 1596, Robert Bowlton or Bolton, the usher, officiated during an interregnum. Peter Smart, who became headmaster at Michaelmas, 1597, was a person who made a considerable stir in the world, and was hailed as the proto-martyr of England in the Laudian persecution. He was a scholar of Westminster and student of Christ Church, Oxford, and was made headmaster by William James, who came to the deanery of Durham from that of Christ Church, and in 1603 he introduced another Christ Church man, George Cockledge, who did not take his B.A. degree till 1606, as usher. Smart must have had a marvellous facility for Latin verse, for after he had become a canon of Durham of the fourth prebend and chaplain of Bishop James, incensed by the introduction into the cathedral of ritualistic practices by John Cosin, the junior prebendary, but chaplain of the new bishop, Neale, especially the setting up of an altar with a number of gilt angels bowing in front of it, he published a Latin poem of close on 1,000 lines on the subject, besides preaching against the innovations in the cathedral. Laud, however, was behind Cosin and his

<sup>1</sup> This painful practice was still pursued at Winchester when I was there in 1863. Thrice a week did we do a 'vulgar' of six or eight lines, and once a week a verse task of any number.



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party. Smart was called up before the High Commission Court and sent to be tried at York, convicted, fined £500, deprived of his prebend and his living, and on refusal to apologise consigned to prison and kept for ten whole years until released by the Long Parliament, who, 22 January, 1641, declared his sentence illegal and void.

Smart's successor in the headmastership in 1609, Thomas John Inglethorp, or Ingmelthorp, seems to have been a man of like kidney. He was of Brasenose College, Oxford, where he took no degree, but was reputed a good Hebrew scholar. In 1594 he became rector of Stainton, Durham. In 1610 he was appointed headmaster of Durham school. On 9 July, 1612, he was brought up before the chapter for a 'biting invective in a sermon' against Ralph Tunstall, one of the canons, who had been one of Queen Mary's chaplains in bygone times. An injunction was issued against his preaching; he was ordered to resign the mastership within a month and give up the living of Stainton which he held. He was also kept in gaol nearly a whole year, until he made a humble submission on 13 June, 1613.<sup>1</sup> At Christmas he retired to Stainton, where he kept a small private school of ten or twelve boys, and was buried there 1 November, 1638.

Nicholas Walton followed. Of him it is recorded that (presumably as a king's scholar) he had made a Latin speech to King James on his entry to Durham, on his way to take possession of the throne of England. He seems to have succeeded in holding his place for 15 years, retiring at Christmas in 1628 to the living of Croxdale, where he died April, 1639. The usher, George Cocknidge, who in 1613 became also epistoler of the cathedral, retired.

Thomas Miller, a Kentish man, of Balliol College, Oxford, was the next headmaster. He had William Vipont or Vipound, an ex-chorister and king's scholar of the school, for his under-master. He was the hero of the following rhyme by James Smart, a lay clerk:—

The ninth, tenth, eleventh, twelfth and thirteenth October,  
Mr. Miller was drunk and never was sober.<sup>2</sup>

His reign, possibly on account of the propensity thus sung, was short, for he left the school at Christmas, 1632, receiving from the treasurer, 'which was give him for his vale, £10.'<sup>3</sup>

Richard Smelt, Master of Darlington Grammar School, then came in. The school flourished under him, about two boys a year from this school going up in his time to St. John's College, Cambridge, alone.<sup>4</sup> Among them were William Lambton, son of Sir W. Lambton, Knt., of Biddicke, of the family of the present earls of Durham; Matthew, son of T. Robinson, Knt., of Rokeby, of the family of the present marquises of Ripon, who went up as fellow commoners; while, side by side with them, were John Ladler, son of a butcher, admitted a sizar, and John Sisson, who went as sizar to his contemporary, Lambton. The only one known to fame, however, is John Hall, admitted a pensioner 26 February, and a fellow commoner 15 April, 1646, son of Michael Hall, of Conssett. He had apparently been previously at Gray's Inn, 7 June, 1643, and returned there after a year at Cambridge, having fluttered the University dovecote with some essays called 'Horæ Vacivæ.' He was an Independent and Republican. In 1648 he wrote a satire on the Presbytery, and in 1649 'a humble motion to the Parliament . . . concerning the . . . reformation of the Universities.'

The school, Langley's school, on the Palace Green, and the master's house at the north end of it having been burnt down by the Scots in their inroad in 1640, Smelt retired on 1 May, 1640, to the living of Easingwold.

Elias Smith, the next master, who came in 1 May, 1640, had a long and chequered career. He had been for some years a minor canon (admitted 13 July, 1628), gospeller and sacrist of the cathedral, and also chaplain of St. Mary Magdalen's Church, and of the chantry over the abbey gate, now called the Treasury, and so curator of the cathedral library there kept. John Mickleton, the collector of Durham history, tells us that Elias Smith had the honour of teaching him, and that owing to the destruction of the school house Smith taught the school where he could, sometimes in the third prebendary's house by the Guest Hall, sometimes in the first prebendary's house. On 15 August, 1643, the chapter presented him to the vicarage of Bedlington, in Northumberland, and he 'is to relinquish his augmentation of £5 per annum in his church' (the minor canons' stipends had been increased from £6 13s. 4d. to £11 13s. 4d.), 'and the school and gospeller's place at May Day, and St. Mary Magdalen's at Midsummer next coming.'

Apparently he was succeeded by Lancelot Dobson,<sup>5</sup> whom Mickleton represents as a 'substituted headmaster,' in what he is pleased to call 'the most wicked times,' meaning that he was put in by the Parliamentarians, and there 'officiated for two or three years, with William Hanby under him.' Then came Samuel Bolton, of Christ's College, Cambridge, who afterwards married Sarah, one of the daughters of the said Elias. And John Ward, clerk, was another substituted preceptor, who was also vicar of Elvet, and for a short time officiated under the same Elias before the coming of Thomas

<sup>1</sup> Wood, *Athen. Oxon.* i. 210; W. H. D. Langstaffe, *History of Darlington*, p. 222, 1854.

<sup>2</sup> Mickleton's MSS.

<sup>3</sup> Account at end of the Treasurer's Book for the year.

<sup>4</sup> *Admissions to the College of St. John the Evangelist*, ed. J. E. B. Mayor, 1882.

<sup>5</sup> Mickleton, p. 61.

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Battersby, 16 July, 1666.' This is somewhat mysterious, as authentic documents show Elias Smith in full possession of the headmastership in 1653. Mickleton, being then only a boy, must have been in ignorance that Elias Smith was not displaced by the Parliamentarians from the school. Whether it was that he was dispossessed of his new vicarage of Bedlington, or for what other reason, certain it is that he returned to Durham School and received a more liberal salary there from a more liberal government than all his previous pluralities had given him. While the chapter had never increased the statutory stipends of £10 to the headmaster and £6 13s. 4d. to the usher by a stiver, we find the Parliamentary Commission<sup>1</sup> 'for the Propagation of the Gospel in the four Northern Counties' ordering, 31 March, 1653, that 'parcell of the rectory of Heighington, of the yearly value of £20, be hereby settled upon Mr. Elias Smyth, head master of the Free schoole of Durham, for increase of maintenance, hee being a very able and painfull man, and the schoole very great and considerable, and the present allowance but about £20 per annum; and he is hereby seised of the same and fully impowered to demand take and receive tythes out of the said rectory to the yearly value aforesaid.' George Vane and Henry Ogle headed the signatures of commissioners. An earlier order of the same body had given John Dury, the usher, an augmentation of £6 13s. 4d. out of the tithes of Hedgefield. On 25 December, 1655, the trustees for augmentations of livings, finding that £20 was two-fifths of the rectory of Heighington, ordered two-fifths of the rectory to be paid to him. On 10 February, 1656, after the Act for the abolition of deans and chapters, which had directed the maintenance of all charities out of the chapter estates, Elias Smith was called upon to produce the local statutes of the cathedral. On 23 June Robert Fenwick and Mr. Anthony Smith, alderman of Durham, and others approved by them were 'intrusted to supply the Free schoole of Durham . . . with schollers duely qualified according to the Foundation, and for the payment to them of their severall pencions.' On 12 February, 1656, the arrears claimed on behalf of the 'schoolemaster, schollers and almesmen,' payable by the late dean and chapter, due since 1 April, 1653, when the Act for the Propagation of the Gospel expired, were ordered to 'be satisfied and paid.'

In 1657 Mr. Edward Thurkeld, described as 'Schoolmaster of Durisme,' complained that 'hee cannot receive the sum of £10 a year to him due, and which ought to be paid him out of the profits settled by former order of the trustees.' He was apparently the second master. Mr. William Harrison, the receiver, was ordered 'to certifie what the obstruceion is.' On 28 June, 1658, the mayor and aldermen prayed allowance of the 'augmentation granted to Mr. Smith, Schoolemaster of the Grammar Schole in Durham,' and it was ordered that on production of the former order it should be paid.

### THE COMMONWEALTH COLLEGE OF DURHAM

A far greater educational work than the mere augmentation of the stipend of the masters of the school was in contemplation, and in part actually accomplished by the Commonwealth. In view of the dissolution of deans and chapters by Act of Parliament of 30 April, 1649, the county of Durham on 24 April,<sup>2</sup> and again, after its passing on 20 August, petitioned Parliament for the creation of a college of learning in their place. Sir Henry Vane, of Raby Castle, was, no doubt, earnest on their behalf, for he was instructed to inform the petitioners that the House had entertained their request. But the alarms and excursions of the war prevented anything more being done then. Another petition was sent in 1652. But it was not till a fourth petition was presented to Oliver Lord Protector, which was received by the Council on 5 July, 1657,<sup>3</sup> that anything was done. Then a committee of the Council reported that 'such persons as His Highness shall think fitt be impowered as trustees for founding and erecting of a college, and that the houses of the late dean and prebends, formerly reserved from sale, be vested in the trustees for the use of the college; and £283 4s. 4d. a year out of the livings of the same chapter be allowed by way of augmentation to three able and godly preachers to be members of the said college, and £117 1s. 5d. reserved on the lease of the manors of Wickham and Gateside, heretofore belonging to the Bishopp, be paid towards erecting and maintaining it, and after the expiration of the lease £500 a year to the college and provost and fellows there.' Commissioners were appointed to make statutes, and a letter sent to the mayor and aldermen of Durham to 'set out so much of the cathedral as shall be necessary for a chappell and schooles.' Letters patent were issued on 15 May, 1657, founding the college, to consist of a provost, two preachers or senior fellows, and twelve fellows, of whom four were to be professors, four tutors, and four schoolmasters, apparently in the Oxford sense of 'masters of the schools,' as the free school was to be attached to the college under its existing masters. License in mortmain to acquire lands up to £6,000 a year was granted. In the college there were to be twenty-four scholars and twelve exhibitioners. The first provost was to be Philip Hunton, M.A., of Wadham College, Oxford. There were to be ninety-one visitors for the year and eleven country gentlemen permanent tutors. An appeal lay from them to Chancery. The college was actually formed, and at once

<sup>1</sup> Lambeth MSS. Aug. of Livings, 972.

<sup>2</sup> *Durham University*, p. 16.

<sup>3</sup> Lambeth MSS. Aug. of Livings, 977, f. 77.



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petitioned for the power to grant degrees and to become a university. Oliver Cromwell, however, died 3 September, 1658. In November Richard Cromwell was petitioned for the same purpose. Oxford and Cambridge strongly opposed the grant of university powers on 16 April, 1659, and an order already drafted giving them was on 22 April suspended. Next year came the Restoration, and with it the endowments of Durham College reverted from educational to ecclesiastical uses, and Durham had to wait nearly two centuries more for its university.

### THE SCHOOL AT THE RESTORATION

Elias Smith seems to have retained his mastership at the Restoration, for one reason, perhaps, because he had preserved the copes, now<sup>1</sup> to be seen in the present chapter library, the old dormitory. But the Treasurer's Book for 1661-2 omits the names of master and usher. He appears, however, as minor canon and chaplain of St. Mary Magdalen, and librarian. On 6 November, 1660, the chapter ordered a survey of the timber yet standing in Bearpark 'to repair the ruins of the church, college and schoolhouse, etc.' On the same day they decreed 'a solemne election of the king's schollers' places, with such exercises and examination publique in the schoole as is usuale in other schooles belonging to cathedralls and colleges upon like occasions, and that notice be given to the Schoolemaster at a convenient tyme before the election for their better preparation.'

The St. John's College Register records the admission of a sizar on 28 May, 1662, who had been educated under Mr. Holden, of Durham school. If he was a master of the grammar school there, this is the sole record of him, owing to the meagreness of the Chapter Act Book of the time. The Treasurer's Book gives no names of or payments to master or usher for the years 1660-2.

On 3 July, 1661, a Chapter Act records among the reasons for dividing up among the canons the fines for new leases, their own praises for the work they had done, including 'the building of a new school house.' This new school house appears to have been that which served for the school until the removal to the present site in 1840. It was not on the old site of Langley's School, but on a new site on the opposite side of the Palace Green at the corner by 'Windy Gap,' and is now used as a lecture room by the university.

In 1662-3, Richard Smelt, who had left in disgust in 1640, re-appears with the old stipend of £10 and £20 augmentation, which had been wrung from the chapter, chiefly, no doubt, owing to the example of the Commonwealth, by a letter from the king. William Hanby or Handby was the usher, with an augmentation of £3 6s. 8d. making up his salary to £10. Meanwhile John Foster, the master of the choristers, received an augmentation of £30, or four times his statutable stipend. Smelt only stayed till Michaelmas, 1665, being succeeded for a year by Samuel Bolton. Hanby remained usher for twenty-eight years to 1689-90, but from 1678 he was seemingly only nominally so, as in that year he is described as 'hypodidascalo emerito,' and received the pay as a pension; while Thomas Thompson, 1675-80, then William Salkeld, 1680-2, William Singleton, 1683-4, Barnabas Hutchinson, 1684-6, Leonard Deane, 1686-7, and John Pakin or Parkin also received the same pay and did the work. Indeed, Hanby must have been incapacitated even earlier than 1678, as from 1673-7 Nicholas Fewster is also described as 'hipodidascalus,' but received only £5 salary.

In 1666 the bishop, John Cosin, who as prebendary had quarrelled with Peter Smart, built on the site of the Langley schools an almshouse with a school house at each end; one on the north with an inscription now only partially legible, 'Schola pro addiscendis rudimimentis literarum,' and one on the south inscribed 'Schola pro plano cantu et arte scribendi.' By deed of 31 August, 1668, he granted to the two schools the old stipend of £8 6s. 8d. each 'paid by the king's officers,' and the pension of £2 each from the bishop's revenues, with an annuity of £70 from the manor of Great Chiltern for the four men and four women in the almshouses. Two other annuities were given by deed of 12 August, 1668; one to St. Peter's College, better known as Peterhouse, Cambridge, of £50 a year for five scholarships, and the other of £20 to the masters and fellows for three scholarships.

This was all very well. But the bishop had no right to take away the stipend of Langley's Grammar Schoolmaster from the master of the cathedral grammar school, to whom it had been paid, not only as the dean and chapter alleged ever since the reign of Elizabeth,<sup>2</sup> but as we have seen ever since the institution of the grammar school by Henry VIII. Dean Sudbury wrote up to the Treasury to prevent their paying the crown stipend to Cosin's nominee, and Cosin then directed the inquiry to be made which he ought to have made before.<sup>3</sup> Eventually he had to

<sup>1</sup> Mickleton, f. 61.

<sup>2</sup> The writer of the report of the Commissioners of Inquiry in 1830 (see *Rep. on Endowed Char. in Dur.* 1900, p. 3), says that 'it is difficult to conceive that it commenced so early as the reign of Elizabeth; for if the school had a mere nominal existence. . . some notice would have been taken by him (Cosin) of such a circumstance.'

<sup>3</sup> Dur. Chapter MSS. Hunter's MS. 13, No. 51, printed in *Cosin's Correspondence* (Surtees Soc.), Letter to Bp. Stapleton, 23 Jan. 1668.

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give way, find other promotion for his nominee, and allow Thomas Battersby, who had become headmaster at the beginning of 1667 to re-enter on the stipends and the house and school which Cosin had built.

Thomas Battersby is perhaps a son or nephew of Mr. Battersby, who was master of the little grammar school at Dent, near Sedbergh in Yorkshire, in 1640. He was, as we shall see, headmaster of Darlington Grammar School in 1664-7. Battersby sent a considerable contingent of pupils to St. John's, Cambridge, many of whom must have been boarders, as some of them were scions of the great houses of the northern counties, such as Richard, son of Sir Thomas Burton, knt. of Brampton, Westmorland, 1677; William, 1682, and John and Ferdinand, 1686, sons of Sir William Forster or Forrester, knt., of Bamburgh; John, son of Henry Hilton, esq. 'by the custom of the place called Baron Hilton,' 1687; Robert, son of Robert Shaftoe, near Newcastle, and so forth. One of them, Thomas Baker, who with his elder brother George, then eighteen, was admitted to St. John's, Cambridge, 13 June, 1674, at the age of sixteen, was the 'socius ejectus,' who composed an often quoted MS. since published by Professor J. E. B. Mayor in his history of the college. A list of no less than eight undermasters is given by Mickleton as having served in Battersby's time, which lasted till 1691. His successor, in a controversy to be presently mentioned, says that 'the school is now in a very low condition,' and his antagonist replied: 'But who, I pray you, brought this school into this low condition? Was it not he that grew so rich by incroachments that he neither regarded the school's reputation nor his own?' which meant simply that he had the boys taught writing.

The school indeed seems to have suffered by the competition of a private school, established in the town by a Mr. Rosse, who contributed a considerable number of pupils to St. John's, Cambridge, and is probably the person pointed at by the next headmaster 'as having as full a license (from the bishop) as his (what he is told was never done before).'

Thomas Rudd, who became headmaster in January, 1690-1, was son of a vicar of Stockton and rector of Long Newton, and was of Trinity College, Cambridge. Almost immediately after his entrance he was plunged into a controversy about the stipend of Langley's Grammar School. Battersby, after he had regained possession of the house and school, had let them to one Mr. Peter Nelson, who carried on a private and preparatory school there. When Rudd came in, Nelson had obtained from the bishop, Lord Crewe, on a *rechauffé* of Cosin's old story, his support to a claim for the grant to him of Langley's school. Rudd had to present a petition to the dean and chapter to support his cause against Nelson, and it was perhaps with a view to this that Mickleton's valuable memorandum on the schools was written. In his memorial Rudd complains that Nelson, 'contrary to what was ever done upon the Palace greene in the memory of man, doth teach considerably above the rudiments of grammar.' Nelson in his answer says: 'Truly not very considerably as yet, but I know not what I may do hereafter, if I should have a licence for it; and I never yet taught half so far as my licence extends, in which I have foolishly wronged myself out of respect to the grammar school, and have recommended divers scholars to others when I might have kept them longer, and to requite my kindness the grammar school has of late been formed into a petty school and a writing school too, and so taken away a great part of my proper employment.' He then gives a home thrust by asking what Rudd 'does for his own salary, being paid by the king's scholars? This I have heard much complained of, and found considerable persons not well satisfied. He will hardly be able to find that within the memory of man that even the king's scholars paid above 12*d.* a quarter till Mr. Battersby's time.'

This is interesting, as showing what happened almost everywhere with free schools and free scholars, and particularly with cathedral schools. The legal stipend not being increased with the fall in the value of money, the necessary increase had to be made up either, as in the case of Mr. Elias Smith, by pluralities, or by imposing fees under the pretext of payment for fires, lights, rods, and the like, and benevolences in the shape of gratuities.

The contest resolved into the usual compromise, the chapter ordering<sup>1</sup> that 'if the bishop relinquish all pretensions or tithes to the schoole house on the Palace Green, and to the king's sallarie unto the master of the Grammar School of this church, the Chapter will allow Mr. Peter Nelson, the present schoolmaster there, for his life £10 per annum quarterly, and pay Mr. Rudd 40*s.* per annum for the school house.' At the same time Rudd's salary was increased £5 a year (*durante beneplacito*), making £25 in all, but the organist's salary had been advanced to £50 in 1691. From this time onward both the salary from the exchequer, reduced however by fees of the officials, which the original order totally forbade to be charged, from £8 6*s.* 8*d.* to £7 7*s.* 1*d.*, and the salary from the bishop's revenues were duly paid to the headmaster of the Grammar School. The crown pension was commuted on 14 February 1888, for a sum of £245 2*s.* 9*d.* consols vested in the Official Trustees of Charitable Funds, the income of which, now further reduced by reduction of

<sup>1</sup> Chapter Act Book under date



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interest to £6 14s. 8d., is still paid to the dean and chapter and by them to the headmaster ; who can therefore claim a direct pedigree from 1414 at least.

As for Langley's Song School it was in 1690 granted by Bishop Lord Crewe to the organist and choirmaster William Gregg, who as William Griggs had on 1 December 1686 leave of absence for three months 'to go to London to improve himself in the skill of musique.' Under later bishops it became a mere sinecure granted as a sort of pension to their ex-domestic servants. The last holder had just died in 1829, and the Commissioners of 1830 obtained a promise from the then bishop to make an appointment 'more consistent with the views of the founder.' In 1868 the salary was paid to the Professor of Music at the Training College for Elementary Schoolmasters. In 1883<sup>1</sup> the payment was not recognised by the Treasury as due from them, and may now be regarded as having ceased ; 'and so ends an old song.'

To return to the Grammar School. The ushers under Mr. Rudd were John Parkin, George Jackson, admitted 8 July 1693, and in 1696 Mr. Thomas Clement, a demy of Magdalen College, Oxford. On his 'complaint of Mr. Thompson's boy,' the boy was on 29 April 1699 'suspended from his place of a king's scholar until further order.' On 4 September 1700, Clement was made a minor canon. On 8 November 1699 Mr. Nicholas Burton was 'sworne Head Master of the Grammar Schoole,' the first time that title is used in the Chapter Act Books. He was a Westminster scholar and student of Christ Church, Oxford. His second master was William Randolph, who stayed for twenty-six years. Burton was also vicar of St. Nicholas, and rector of St. Mary-le-bow, in which church he was buried in 1713. He retired from the headmastership at Christmas 1709, when Thomas Rudd returned from the headmastership of Newcastle Grammar School to fill the gap for a couple of years and see his son heading the list of king's scholars.

John Rymer became headmaster at Michaelmas 1711. The eighteenth century was everywhere pre-eminently the age of long scholastic reigns. Rymer reigned at Durham twenty-one years, dying even then only forty-nine years of age 13 February 1732,<sup>2</sup> so that he became headmaster at the age of twenty-eight. Robert Symon succeeded Randolph as usher in 1727, and only went out when Rymer died. Richard Dongworth ruled nearly thirty years, from Christmas 1732 till his death 23 February 1761, aged fifty-eight. At his accession the headmaster's stipend was raised to £45, the choristers' master meanwhile having gone up from £82 10s. in 1734, to £90, and in 1750 to £100. Dongworth was raised in 1752 to £60 a year, but then he had been usher for twenty-eight years before, from Michaelmas, 1733. Thomas Randall, the next headmaster, held for only seven years. He had been at Eton and Corpus Christi College, Oxford. He was a historian and antiquarian, and collected the materials with which Hutchinson's *History of Durham* was founded, which he had given, 28 August 1774, to Mr. George Allan. Randall and his successor, Jonathan Branfort, also an Etonian and fellow of King's College, Cambridge, and vicar of St. Mary-the-Less, 1768-82, served without an undermaster. So also at first did James Briton or Britton, 1782, which looks as if, as at other cathedral schools at this time,<sup>3</sup> the school was in low water, probably from lack of proper pay to the masters, who had to eke out by clerical pluralities what had then become miserable stipends. In 1786, however, William Baverstock was appointed second master, at the magnificent salary of £20, but that was double what his last predecessor received forty-five years before. He was succeeded in January 1789 by James Mannisty, who saw out the century. James Carr, a fellow of Trinity College, Cambridge, became headmaster in 1812. The refusal of all information about the school to Carlisle in 1816<sup>4</sup> looks as if the school was not in a very flourishing condition.

The second master was, however, a very distinguished person, whose name will always be remembered with gratitude by all interested in history and antiquities, particularly in the city and county of Durham. This was James Raine, the founder and first secretary of the Surtees Society, which was the first in point both of time and merit of all the local record publication societies which have done so much for our knowledge of the past history of our country. Raine was himself educated first at the little Grammar School at Kirby Ravensworth or Kirby Hill, near Richmond in Yorkshire, where the governors are still elected by the queer device of writing the names of parishioners on balls of wax, which are put into a bowl of water, and whosever name is first drawn out by the vicar becomes governor. Thence he went to Richmond Grammar School, then the Winchester or Eton of the North. He became second master at Durham in 1812 ; and there made the acquaintance of Robert Surtees of Mainforth. In 1816 he became librarian to the dean and chapter, and used his opportunities to ransack the records as they had never been ransacked before, and gave immense help to Surtees in his *History of Durham*, the last parts of which as his executor he edited. After retiring from the second mastership in 1827 with the living of St. Mary in the South Bailey, he devoted himself almost wholly to research. In 1830 he published his *History of North Durham*. In 1834 he founded the

<sup>1</sup> *Rep. on Dur. Char.* p. 31.

<sup>2</sup> *V. C. H. Northants*, ii. Schools.

<sup>3</sup> Hutchinson, ii. 275.

<sup>4</sup> *Endowed Grammar Schools*, i. 402.

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Surtees Society in memory of Robert Surtees, became first secretary of it 27 May 1834, and himself edited its first nine volumes and no less than ten others before his death in 1858. Not the least of his works was the training of his son the late James Raine, a Durham Grammar School boy, canon and chancellor of York Minster, who succeeded him as secretary of the Surtees Society, and did even more for the history and antiquities of York than his father had done for those of Durham.

Another Grammar School boy whom James Raine I. trained, though not while at the school, was William Greenwell, minor canon and Raine's successor as librarian. He has made his name a name of fame in walks so diverse as trout-fishing, where 'Greenwell's glory' keeps it green; archæology, where a great work on British barrows is the chief authority on the subject; history, in the course of his local studies in which he has demonstrated that nearly the whole of the so-called foundation charters of Durham were forgeries, for the sake of establishing the priority of the prior to the archdeacon of Durham; and numismatics, in pursuit of which he accumulated a unique collection of Greek coins.

From 1832 to 1836, the Rev. Matthew H. G. Buckle, who had been a fellow of Wadham College, Oxford, was headmaster. Of the early days of Buckle, it is stated in a local history<sup>1</sup> that 'for some years this school has been advancing in celebrity, and is generally attended by about eighty scholars.' In 1834 there were about forty boys altogether. The only playground was the churchyard; but cricket and football were played in a field out of the town. In this time, however, the first four-oared boat, appropriately yclept the *Argo*, was started. Many old Dunelmians have since worn the blue on the Cam thanks to the early practice they had on the Wear. Dr. Edward Elder, a former scholar of Balliol College, Oxford, came as headmaster in 1839. He quickly restored the prestige of the school; so much so, that to relieve the overcrowding of the one large room in summer, a contingent had to be sent to study nature in Castle Eden woods. He promoted therefore the removal of the school from the cathedral yard to its present commanding site on the opposite side of the river Wear, where, far above the smoke and stir of the dim spot which man calls Durham, it looks on to woods and green hills on one side, and on the other across wood and river to the towering masses of 'the Abbey.' The nucleus of the present buildings was a private house, called Bellasyse, bought in 1842 from Dr. Cook, a physician, the father of Cook, who claimed to have invented the electric telegraph in that very house. It was an old possession of the monastery. Mention is made of it in the Bursars' Roll in 1536-7 as being in the 'old borough,' when 3 acres of meadow in the field of 'Bellacis' called Goosecroft (goose-croft) is returned as paying no rent because it is in the cellarer's hands. The name, which means 'Fair Seat,' or beautifully situated, 'Bel Assise,' much after the model of Beaurepaire, Belvoir, and Beaulieu, is still most appropriate.

The house became the headmaster's house and was adapted to receive boarders. A big school was built on it at right angles, a fine room, of a rather too Gothic (as Gothic was understood in 1844) darkness. It is panelled, and the names of the past headmasters from 1557 (with a good many mistakes) are inscribed round the room, in bad Latin; Gulielmus for William and Gualterus for Walter, though our ancestors had the good sense to write Willelmus and Walterus. Dr. Elder was most successful in his administration, and with some exaggeration is sometimes spoken of as a second founder.

In 1853 he was called on by acclamation to return to his own old school, the Charterhouse, then in London, as headmaster, and took with him a large contingent of Dunelmians, including Henry Nettleship, who made his mark in the history of Oxford scholarship in his Corpus Professorship of Latin.

The Rev. Henry Holden, who succeeded him, was a Shrewsbury boy of that brilliant epoch when Shrewsbury scholars led the van in classical scholarship. A scholar of Balliol College, Oxford, 1832-7, he had been headmaster of Uppingham Grammar School from 1848 to 1853, where he saw the school grow from twenty to seventy boys, when he was promoted to Durham. It is to be feared that a headmaster of Uppingham nowadays would not consider it promotion. A brilliant scholar, contributing largely to the famous *Foliorum Silvulae* of his brother, the headmaster of Ipswich, nothing intellectual was alien to him. He was an eminent photographer half-a-century ago, when there were no Kodaks to make photography easy, but a man had to be something of a chemist and also something of an artist to be successful. He is described by a boy who was there from 1859 to 1864 as great as a fisherman and a skater, as well as a conversationalist at the dinner-table of the boys; and, above all, as a scholar and the creator of scholars. Brilliant successes marked his reign, of whom Mandell Creighton, the late bishop of London, was perhaps the most distinguished. Dunelmians of this time proudly recall the year 1863,<sup>2</sup> in which there was a Sixth

<sup>1</sup> *View of the County Palatine of Durham*, ii. 413, by E. Mackenzie and M. Ross, Newcastle, 1834.

<sup>2</sup> Article by R. H. J. Poole, a scholar of B.N.C. Oxford, who rowed in the University eight, now an assistant master at the school, quoting article by W. L. Hetherington in the *Dunelmian*, in the *County Monthly Chronicle*, October, 1902. We are bound to say that two of the scholarships were at Worcester College, Oxford, and one at Durham University, and that the double Blue got a third in 'Mods' and a pass in the Final Schools.



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Form of nine boys, of whom five got open scholarships, two won cadetships in the Indian Civil Service, and the other two, though they did not win open scholarships, won first-classes and fellowships; while two of them were also 'blues,' one of them a double blue. Mathematics were relegated to the afternoons, and were even then interrupted by the boys being called away to have their classical compositions looked over by the headmaster.

Dr. Holden found 100 boys, and on their quickly rising to 120, John Gent, afterwards Hertford and Ireland scholar at Oxford, wrote to the dean and claimed the extra week's holiday which had been promised whenever that mystic number, the long hundred of our Saxon forefathers, had been reached.

In the year after Dr. Holden's arrival, the dean and chapter made a return to the cathedral commission on the school as part of the cathedral foundation.<sup>1</sup> In this return they made the extraordinary statement that 'the statutable stipend of the chief master of the Grammar School is 102s. a year, and of the usher is 59s., and the master of the choristers 109s., but they do pay the headmaster (they appear to draw some subtle distinction between the title of chief and head master) £200 a year and the second master £80 a year.' Why they understated the amounts of the statutable stipends by nearly one-half, unless to cover the fact that they had increased the organist's salary much more than the headmaster's, it is a little difficult to make out. Perhaps the person who supplied the return had mistaken a half-year's for a whole year's payment, though whence the odd shillings of the headmaster and choristers' master were derived we cannot even guess. The stipend of £200 to the headmaster, while the canons, even on the truncated basis settled by the Ecclesiastical Commissioners, had £1,000 a year each, is a striking commentary on the difference between the treatment accorded to those who were members of the governing body of the cathedral and those who were not. The original £33 6s. 8d. of the canons had grown so that at one time 'the golden prebend' was worth, it is said, £9,000 a year, while the original £10 of the headmaster had been raised twenty times only. The king's scholars received £30 a year each, which, the chapter remark, with the remission of tuition fees of £9 a year, made the total value of the scholarship £39. They omitted to remark that the statutes made the king's scholars free from tuition fees. The second master even had to pay the rent for his house recently built. The chapter, having then no further personal interest in the common estates of the church, were generous in their suggestions to the cathedral commission for augmentations to the school. They recommended that the king's scholars' payments should be made obligatory, and that leaving exhibitions should be provided. 'As there were only a few very small scholarships of £10 to £15 a year tenable at Oxford and Cambridge, and three of £15 to £40 a year at Durham University, a certain number of moderate exhibitions, say, twelve of £40 each, should be provided out of the funds of this cathedral to assist deserving boys at the Universities.'

Under Dr. Holden the school increased its accommodation equally with its numbers. In 1853 the first two class-rooms were added to the big school, with dormitories over them, and in 1862 further additions were made to the headmaster's house. The school was visited for the Endowed Schools Inquiry Commission in 1865 by Mr. J. G. Fitch. He found 132 boys in the school, of whom 91 were boarders, viz., 52 in the headmaster's and 22 in the house of the second master, and 17 in a licensed house kept by a private person. Those in the two masters' houses paid £40 a year under twelve years of age and £50 above twelve. In the private house the fees were 35 guineas. The recommendation of the chapter to this cathedral commission had borne no fruit. The salaries of headmaster and usher with the value of the king's scholarships, of which he makes the amazing statement that 'these were instituted by the dean and chapter,' remained as in 1854; and no leaving exhibitions had been founded. Dr. Holden was a schoolmaster of some originality. The hours, instead of 9-12, as then usual, were 8-11 a.m., and 2-5 in the afternoon; so that the boys had two hours for cricket or football before dinner instead of one. His arrangement of looking over exercises with the boys singly is much praised by Mr. Fitch, but there was nothing uncommon about this. One arrangement of the school was most peculiar. Instead of the general examination being held twice a year before the vacation it was held after it, so that no holiday tasks were set; but as the examination was in the work of the previous term, 'each boy . . . had the strongest motive to refresh his memory during the vacation . . . the boy who has worked well is permitted to enjoy a real holiday, while the less careful scholars alone are forced to work.'

Though himself *par excellence* a 'scholar,' Dr. Holden started in days, full early for such an institution, 'a modern side,' in which 'a sound knowledge of the English language with composition in prose and verse is made an especial subject.' But it remained in an inchoate condition, having only sixteen boys of very various ages and attainments all taught by one man, and was rather 'a refuge for the destitute'—'chiefly overgrown, dull boys, or boys who have not had a fair home education.'

<sup>1</sup> *Cathedral Commission Report*, 1854, p. 51.

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On 27 November, 1872, Queen Victoria in Council approved a scheme of the Ecclesiastical Commissioners by which a net sum of £3,000 a-year was provided out of the chapter revenues for the school until the dean and chapter were put in possession of estates worth £11,000 a-year, when the school was to have  $\frac{3}{8}$ ths of that sum. As the chapter has never been put in possession of estates to that amount the school remains in possession of a fixed income of £3,000 a year—a fairly adequate arrangement as things go at present. The first fruits of the new endowment were seen when in 1874–6 a library, class-room, a new storey to the headmaster's house, and ball courts were added, and in 1877 six leaving exhibitions of £60 a year to the Universities were established. But the school was now on the down-grade. While in 1870 there were 136 boys, in 1880 there were only 105. In 1882 Dr. Holden retired to a well-earned repose. He is commemorated by a Holden prize for Greek or Latin verses. Then came William Andrewes Fearon, a house-master at Winchester College. He had been the first Winchester scholar who, in consequence of the reforms of the University Commission of 1854, went up to New College, Oxford, without the right to become a fellow after two years' probation. His career at Oxford was marked by double firsts in classics and mathematics, both in Moderations and Final Schools, and the presidency of the Union Debating Society. A fellowship at New College attained in competitive examination followed as a matter of course. Though he only remained at Durham for two years, he made his mark and left behind the tradition that his biennium was the golden age of the school, to which later and less prosperous times looked back with fond regret. Two class-rooms, a museum and a laboratory for physical science, and a swimming bath, accompanied by an extension of the cricket ground, marked his advent in the buildings of the school and his regard for physical as well as intellectual development. He made at his own expense a walk, still known as Fearon Path, by the river, from Elvet Bridge to Bow Lane, thus benefiting alike the school, the university, and the town by a short-cut to the rowing course and a grand stand for boat-races. To organize the modern side, and make it no longer a refuge for incapacity, he brought from New College, Francis Alan Ker. 'For eleven years he worked in this school and made an impression which those who had the happiness of knowing him can never forget,' and when a fatal accident in 1893 terminated his vigorous and useful life, 'one feels as though half the school were gone' wrote one of his old pupils on hearing the news. He has been commemorated by a Ker Memorial prize for modern history. It was a great misfortune for Durham that in 1884 his old school Winchester demanded Dr. Fearon as headmaster when Dr. Ridding was appointed bishop of Southwell. His influence had already made itself felt in the honours list, the year 1884 being distinguished by six scholarships at the Universities, four in classics and two in mathematics—a notable achievement for a school of, in July, 1884, 134 boys.

The Rev. J. M. Marshall, who won fame as second master of Dulwich College, followed Dr. Fearon, and held office for just ten years. The school was not so prosperous in point of numbers as it might have been. The Rev. Walter Hobhouse, fellow of Lincoln College, Oxford, held just half that time, when ill-health compelled his retirement in 1899, and he is now editor of the *Guardian*. Next came the Rev. Albert Ernest Hillard, who from Kingswood School, Bath, became a scholar of Christ Church. It now numbers 88 boys, of whom 42 are in the headmaster's and 32 in the second master's house. Mr. Hillard has just (June, 1905) been elected headmaster of St. Paul's School. His place is to be taken by the Rev. H. W. McKenzie, of Keble College, Oxford, now second master, and formerly headmaster of Lancing College.

### DURHAM UNIVERSITY

On the third attempt the foundation of a university at Durham was successful. The present Durham University, though only dating from 1831, and established by Act of Parliament 4 July, 1832, is the third oldest of English universities, ranking next in age, though 'longo intervallo,' to Oxford and Cambridge, and is of ancient date compared with the Universities of London, Manchester, Leeds, and Birmingham. According to its historian, Dr. Fowler, it owed its origin to a panic produced among ecclesiastics by the Reform Bill of 1832, when every ancient institution was supposed to be threatened with destruction. On the doctrine of ransom the dean and chapter therefore preferred to give a part of their endowments to education. The movement began with a letter from the dean, J. B. Jenkinson (who combined the deanery, said to be worth £30,000 a year, with the bishopric of St. David's), drawing attention to the political danger and the necessity of doing something for education. On 21 September an Act of Chapter was passed for an 'Academical Institution or College or University.' Bishop van Mildert took the matter up, and on 20 November proposed to appropriate to the University three prebendal stalls (they were then worth some thousands a year each) and £3,000 a year, to be obtained from the enfranchisement of the South Shields estate for £80,000. The Act of Parliament already mentioned was then passed authorizing the University of Durham,



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to consist of such warden or principal and other officers as the dean and chapter, 'who were to be governors,' should, with the consent of the bishop, who is visitor, prescribe. The university was opened on 28 October, 1833, with nineteen scholars on the foundation, lodged in the Archdeacon's Inn on Palace Green, and eighteen other students. On 20 July 1834, a statute of the chapter constituted the university, which was, by charter of King William IV., 1 June 1837, made a corporation under the name of 'The Warden, Masters, and Scholars of the University of Durham.' The first degrees were granted by the university, 8 June, 1837. In 1839-40 estates were definitely assigned to the university. First and foremost was the Castle of Durham, the splendid Bishop's Palace, which gives the University of Durham a house more ancient and more magnificent, a quadrangle more spacious, than any possessed by the University of Oxford. The principal, fellows, and students of what is called University College, dine in the hall of the Castle, a hall which is larger than that of New College and more beautiful than that of Christ Church, Oxford, while some students live on the top of the mound in Bishop Hatfield's Keep, one of the most splendid sites in the world. Unhappily the building is only a modern imitation of the antique.

The university has annexed the whole of the Palace Green, the magnificent quadrangle on the north side of the cathedral. On the east side it has occupied the Exchequer buildings and the Palatine Court of Chancery with its library, and has planted its museum in Cosin's Almshouse, and uses the Langley-Cosin Schoolhouses, and on the west side the post-Restoration Grammar School, as lecture rooms; while in the persons of the canon-professors of Divinity and Hebrew it has also thrown out creepers into the 'College' on the south side of the church. Hatfield Hall, another hall of residence for students, opened in 1846, is situated in the North Bailey, overlooking the river, while the latest addition in 1904, St. Chad's Hall, at No. 1 South Bailey, occupies the very site of the Almonry School and the ancient Fernery outside the Abbey Gates.

An extinct hall of the same kind was Bishop Cosin's Hall, begun in 1851, and from 1854 to 1864 presided over by the present Provost of Eton, J. J. Hornby, who left to become second master at Winchester and then headmaster of Eton.

The university has also 'sent out its branches unto the sea and its boughs unto the river' at Newcastle-upon-Tyne, where in the Durham College of Medicine, 1870, and the Durham College of Science, 1871, the numerically larger portion of the university is now to be found.

Durham University proper has not developed at the same rate as its younger offspring. When first started, railways were in their infancy and the nobility and county gentry of Durham and the north evinced some disposition to send their sons there. Canon Greenwell remembers three sons of noblemen and eight sons of baronets at University College in his time, c. 1840.<sup>1</sup> But as railways spread they were drawn off to Oxford and Cambridge. Also the university was too much governed by the dean and chapter. Even the scholarships were all in the gift of the chapter and not thrown open to competition till 21 November, 1859. It was also for long too much of a one-man university, under Archdeacon Thorp the first warden, who used to talk of it as 'my university,' and, being a strong high churchman treated it as a strict church institution. Hence the theological side was the only one that flourished, and the University seemed about to die of inanition. In 1861 a royal commission was appointed, and as one result the wardenship was annexed to the deanery. The accession of Dean Waddington, a genial man of the world, who had been dean since 1840, increased the numbers. He urged the chapter to give up the governorship of the university in pursuance of the Act of 1841 which empowered them to transfer it to the university itself. Dean Lake, a liberal in his ideas of education as of politics, promoted the Newcastle colleges and various secular developments, degrees in law and music, and so on. In November, 1895, Bishop Westcott and Dean Kitchin again tried to induce the chapter to transfer their governing powers to the university, but the canons declined even to attend a conference on the subject. So it still remains under ecclesiastical tutelage.

In 1895 Dean Kitchin called the new sex in to redress the balance of the old by obtaining a supplemental charter for degrees to women. In 1899 a hostel for women was opened which since 1901 has been on Palace Green in the Abbey House. The university now contains 321 male and 32 female students in residence at Durham, of whom 180 men are in University College and Hatfield Hall and 141 are unattached, and 13 women are in the women's hostel and 19 unattached. This is exclusive of a large number of students in music, male and female, who are non-resident.

### DARLINGTON GRAMMAR SCHOOL

Darlington, the site of an ancient manor house of the bishops of Durham (which in 1806 became the town poor-house!) and of the collegiate church of St. Cuthbert, whose beautiful spire and high-pitched twelfth-century roof still form the most striking objects which greet the eye on entering the town, could not have been without its grammar school. But the only evidence of it

<sup>1</sup> *Durham University*, by Dr. Fowler, p. 110 n.

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now forthcoming is the casual mention already quoted of the almoner of Durham in 1416, paying 14s. to 'a schoolmaster coming from Darlington to teach the boys for the time being' during a vacancy in the mastership. In the certificate made in 1546 under the Chantries Act of Henry VIII., the existence of an endowed grammar school comes clearly to light—'The Chauntry of All Sayntes, in the parisshe of Darlyngton.'<sup>1</sup>

'The said chauntrye was founded by one Robert Marshall, clarke, to fynde a priest for ever to pray for his sowl and all christen sowles, and to kepe one yerely Obitt and a free scoole of grammer for all manner of children thider resortyng.'

The Valor Ecclesiasticus of 1535 had recorded the chantry and Leonard Melmerby as chantry priest, but without disclosing the fact that it was a school. The value was then stated to be £6 6s. 8d., and the net value 114s. What had occurred in the interval to bring the gross value down to 91s. 8d. and the net value to £3 8s. 3d., as stated in the chantry certificate, does not appear. However, no two accounts of this time ever agree. A third and intermediate valuation was given<sup>2</sup> in 1548 by the chantry commission of Edward VI.

'The Chuntery of All Seyntes, or the Free Scole in the parishe church of Derlington.

'Thomas Rycherdson of the age of 30 yeres, incumbent. The yerely valewe, £4 19s.; the reprints, 6s. 8d.; the remaine, £4 12s. 4d.' Then after a statement of the value of the deanery and four prebends in the collegiate church, £53 6s. 5d., comes the item:—

'Rente bequethed to the afforseyd Gramer Skole: the yerely valew, 3s.'

The foundation of the chantry must be taken to have been not an entirely new creation but the endowment, or augmentation of the endowment, of a school previously unendowed, and probably paid only a small fixed stipend out of the general revenues of the collegiate church.

The date of foundation and identity of the founder have not been made out. Longstaffe<sup>3</sup> hints at a Robert Marshall mentioned in Boldon Book, a twelfth-century rental.

It is more likely to have been Mr. Robert Marshall, who on 14 April, 1515,<sup>4</sup> was presented to the provosty of Hemingbrough (Hemmyngburgh) collegiate church in the East Riding of Yorkshire. Perhaps Cuthbert Marshall, the last dean, already dean in 1535, was some relation.<sup>5</sup> He was probably the same Cuthbert Marshall who in 1510 was schoolmaster of the almonry of Durham. In 1548 he was also archdeacon of Nottingham and canon residentiary of York, where he was buried 25 January, 1550. The chantry was confiscated as from Easter Day 1548.<sup>6</sup> The school was continued by an order of Sir Walter Mildmay and Robert Keylway by warrant 20 July, 1548,<sup>7</sup> assigning that, 'Thomas Richardson, scholemaster there, shall have and enjoye the rome of scholemaster there and shall have for his wages yerelie, £4 3s. 8d.', and the auditor and receiver of the court for the county were directed to pay the same.

Accordingly in 1548–9<sup>8</sup> we find under the heading of 'Late chantry of All Saints in the parish of Darlington' the item, 'in the yearly stipend or salary of Thomas Richardson, master of the grammar school at Darlington, founded by the chantry of All Saints, at £4 3s. 8d. a year; in allowance of the same for a year and a half during the time of this account, £6 5s. 6d.'

In 1553, according to Browne Willis, Richardson was receiving £4.<sup>9</sup> There are no further extant accounts of crown revenues for Durham till 1574–5, in which year Thomas Richardson still received £4 3s. 8d. The school was accordingly still being maintained with him as master. It is true we find one of the witnesses to the will of 'George Reynd, parson of Dinsdall,' made on 15 April, 1559, 'Robart Hall, scholmr. of Derlyngton,'<sup>10</sup> but he appears to be the same person as Robert Hall, who in 1567<sup>9</sup> witnessed the enrolment of a deed in the Court Roll of the borough, under the title of clerk of the court; and also as the parish clerk of that name who attended a visitation by Bishop Barnes<sup>11</sup> in the person of his chancellor, Robert Swift, on 6 February, 1577. He, therefore, must be taken to have been the usher or the petty schoolmaster, not the Grammar School master.

The school was re-founded, its former property being re-granted for its endowment, by charter or letters patent of Queen Elizabeth 15 June, 1563. The charter purported to be made on the petition of Henry [Neville], earl of Westmorland, and James [Pilkington], then bishop of Durham, on behalf of the inhabitants of the town of 'Darlyngton,' 'for the perpetual education, erudition, and instruction of boys and youths of that town there to be trained, instructed and taught.' The grant was in larger terms than the petition, not being confined to the town. 'Henceforth there may and shall be a Grammar School in the said town of Darlyngton, which shall be called the Free

<sup>1</sup> *English Schools at the Reformation*, A. F. Leach, p. 61, from Chant. Cert. 18, no. 102.

<sup>2</sup> *Ibid.* p. 319 from Chan. Cert. 17. <sup>3</sup> Longstaffe, *Hist. of Darlington*, p. 206. <sup>4</sup> Durham Reg. v. 163.

<sup>5</sup> *Hist. of Darlington* by W. H. D. Longstaffe, Darlington, 1854, p. 197, note.

<sup>6</sup> Chantries Act, 1 Edw. VI. cap. 14, s. 2.

<sup>7</sup> *Eng. Sch. at the Reformation*, p. 62 from P.R.O. Schools Continuance Warrants, 9.

<sup>8</sup> P.R.O. Mins. Accts. 2–3 Edw. VI. no. 88, f. 44.

<sup>9</sup> Longstaffe, p. 260 n.

<sup>10</sup> *Proc. of Bp. Barnes* (Antees Soc.), App. c. v.

<sup>11</sup> *Ibid.* 59.



## SCHOOLS

Grammar School of Queen Elizabeth, for the education, erudition, and instruction of boys and youths in grammar to endure for all future time; and that school for ever to continue and endure, we erect, ordain, create, found, and establish by these presents of one master or padagogue (*magistro seu pedagogo*) and one undermaster or sub-pedagogue (*hipodidasculo seu subpedagogo*).<sup>1</sup> That this intention might the better take effect, the queen then proceeded to create a very strange governing body. 'We will and ordain that the four guardians (*gardiani*) of Darlington for the time being shall be and be called governors of the said Free Grammar School and the possessions, revenues, and goods of the same free school,' and the then churchwardens (*modernos gardianos ecclesie*) were then named as the first governors and incorporated; it being provided that when one of them died or was removed from office the twenty-four of the more approved and discreet (*probiioribus et magis discretis*) inhabitants of the town should appoint a successor. These twenty-four were not any casual twenty-four,<sup>1</sup> but were practically a municipal corporation of the borough, or what was afterwards called a select vestry; probably originally the grand jury of the court leet of the borough. A 'Twenty-four' is found in power in Rothbury in Northumberland, and many other places in these northern counties and elsewhere. The governors were given the power of appointing the master and usher, and 'according to their sound discretions of removing and in their place or places placing and appointing others or another more fit.' The lands granted were in Heighington, Darlington, and Thornaby in Yorkshire; all which 'were lately parcell of the late chantry called Roberte Marshallles Chauntery, lately founded in the church of Darlington, and are now extended to the clear yearly value of £5 4s. 10d.'

In the absence of any of the school books kept by the churchwardens and of churchwardens' accounts before 1630, the history of the school remains almost a blank. We are told<sup>2</sup> that in 1579 Robert Ovington, the master, was deprived after an inquiry by two clergy, and the churchwardens ordered to elect a new one; but on what charge we are not told. Similar absence of references attends the list of masters given by Longstaffe, from which we learn that Lewis Ambrose occurs as master in 1587, and that Robert Hope, curate, was licensed in 1622, Thomas Hardy in 1630, Richard Smelt in 1630, Robert Clerke in 1632, one Matthew Phillipp, schoolmaster of Darlington, having been buried in the church 30 April, 1634, and Richard Birkbeck, 9 October, 1634. Some of these names, and most of the succeeding names up to 1740, are demonstrably wrong or inaccurate. Oddly enough, one of the earliest entries in the churchwardens' church books is a rental of the school showing a receipt of £14 10s. 4d., the income having more than doubled since the charter in spite of a long lease of the 'Cheavits,' as the Thornaby property was called, for eighty-one years. Next year, 1631, £6 13s. 4d. was received for the half-year 'for the free schoole, which we paid to Mr. Thomas Hardy, then schoolmaister, in full payment for his half-yeares teaching there.' On 28 November the other half-year's rent, £6 17s. 8d., was received, 'whereof we paid to Mr. Richard Smelt, then schoolmaister, but only £5 3s. 10d., and reserved 33s. 10d. for the finishing out of the reparacions belonging the said free schoole.' There was also an item 'for the new stauling and repaireing of the free schole.' 'Item for a pottle of wine and sugar for entertaineing Mr. Smelt into the said schoolehouse 2s.; John Ayre for firdayles (deal), 6s.; glasier for mending thirteen paines of glass and for seven quarrys of glass 4s.; one long geast (joist) for great table 6s.; studdy glass window mending 18d.; laying the schoole house flower 1s. 4d.; dressing the same 2d.' With other items the total cost was £10 8s. The sack was rather wasted, as Mr. Richard Smelt only stayed a year before passing on to be, as we have seen, headmaster of Durham School, a passage which at least testifies to the good status of Darlington School at the time. Smelt's successor was apparently Robert Clerke.

In 1638 the churchwardens' accounts give (p. 79) 'For one quart of claret wyne when Mr. Robinson went to enter of the skoule 8d.' How long Robinson continued we do not know. In 1640, probably because of Scotch disorderliness, the large sum of 30s. 8d. was paid (p. 103) 'for glasinge the schoolehouse windowes.' Mr. Robinson received part of the school rents in 1642 (p. 106), and in 1644-5 was a churchwarden. In 1647 occurs the strange item 'for taking downe the scholhouse 5s.' In 1650 'the mason of Redwood' was given 2s. when 'he vewed the schoole,' and in 1651 (p. 142) payments to the amount of £16 9s. 1d. were made for the school which almost amount to a rebuilding, the principal items being: 'masons £2 6s. 2d., wrights (i.e. carpenters) £4 13s., and iron worke £1 7s.' John Cooke was paid for school wages £1 6s. 7d.; and in 1653 (p. 155) 'lent to J. Cooke by consent for want of his school salary, £1.' He seems to have been parish clerk and a sort of general factotum and hedge lawyer, as he was also paid 2s. 6d. 'for drawing the agreement between the churchwardens and the plumber'; in 1654 10s. 'for keeping the clocke,' and in 1655 (p. 168) 3s. 4d. for writing the second monthly assessment, and another 3s. 4d. (p. 170) for 'writing our (the churchwardens') accounts.' He may have acted as master

<sup>1</sup> As might be imagined from the version in C.C.R. xxi. 58, 'twenty-four inhabitants of probity and discretion.' The corporation of Guildford were the 'mayor and approved men' (*probi homines*), 'preudhombres' of Norman French.

<sup>2</sup> Longstaffe, p. 257 note.

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of the Grammar School, teaching the petits during the rebuilding of the school, but he was not schoolmaster.<sup>1</sup>

In 1652 the rebuilding seems to have been finished, 'fenstering in the scoole chambers and chimneys,' costing £1 14s. 4d. and 'the thatcher and his server 1s. 8d.' A new schoolmaster came: 'Paid Mr. Johnson, scoolemaster, for this half-year £7 4s. 4d.'

But now Darlington School, like that of Durham and a large number of other schools throughout the country, felt the benefit of a reforming government. On 29 March, 1653-4,<sup>2</sup> the 'commissioners for propagating the Gospel in the fower northerne counties, sitting at Newcastle-upon-Tyne,' made the following order: 'Darnton<sup>3</sup>—Wheras Ralph Johnson hath beene befor us and upon examinacion and tryall of his learning is found fitt to teach a schoole for ye encouragement of youth in piety and good literature, and being recommended for a painfull man and of unblameable life and conversacion, wee doe hereby order the said Ralph Johnson, schoolemaster at Darnton in ye countie of Durham, to be confirmed, and for his support and maintenance wee doe hereby order that parcell of ye tithes of Heighington, of the yearly value of £20, bee settled upon the said Ralph Joslin and continued to him soe long as hee shall remayne schoolemaster at Darnton aforesaid.'

This order was signed by George Vane and Henry Ogle and ten others.

On 28 December, 1655,<sup>4</sup> by an order reciting this order in favour of Mr. Ralph Joslin, alias Johnson, the receiver of Heighington tithes was ordered to pay two-fifths of the whole to him, instead of the fixed sum of £20 a year. A similar order had been made, it may be remembered, for Durham School out of the same tithes. Mr. Johnson was also a preacher, receiving 1s. 1d. for preaching one Sunday in 1654 (p. 159).

In 1658 we find one of Johnson's pupils, Francis, son of Robert Roper, farmer, of Kellowe, who had been at Darnton for three years under Mr. Johnson, admitted as sizar at St. John's, Cambridge;<sup>5</sup> while in 1660 another Darlingtonian, John, son of Mark Parker, of Bowes, was admitted. It would seem that these were boarders. Oddly enough, these are the only two boys who went from Darlington to this great northern college in the whole 130 years from 1630 to 1760; so that the Protectorate was a golden age for Darlington School.

Other marks of a reforming era in education were the purchases by the churchwardens in 1653 (p. 156) of 'a primer for a poore boy, 4d.,' and in 1655 'an accidence for a poore boy, 6d.' A pupil-teacher was employed 'For Edward Holmes a poore scholler at the petit schoole, for half a yeare's teachinge, 3s. 3d.,' while in 1654 Roger Jewet, Mr. Swinburne, Ralph Hall, and 'Widdow' Seamore were paid 'for scholers teaching £1 4s.' The 1655 accounts show that the tariff for these 'Dames' was not very high, Jewet receiving 'for one quarter's wages for learning a boy, 1s.;' 'Dame Seamer for her wages for teaching a boy one yeare, 4s.'; Ralph Hall 'for 3 lads learning one quarter, 4s.'; Mr. Swinburne 'for learning John Wilson's children and Giles' daughter's child, 7s.' These payments for teaching apparently pauper children 'on the parish' cease with the reaction of the Restoration.

Another mark of reform was an order of the churchwardens and seventeen of the 'twenty-four' complaining of the under-letting of land belonging to the church and school, and forbidding any leases for the future 'without the full and free consent' of the churchwardens and twenty-four 'to be agreed upon at a public meeting in the church or elsewhere upon public notice.'

Mr. Johnson probably was turned out after the Restoration, as in 1661 the churchwardens (p. 204) record £2 paid 'to defray the charge of the sute concerning the schole.' No reference occurs to the school again till 1664, when Mr. Battersby was paid £2 in part of his salary, and Mr. Parkins for his 'sallery' £5. Mr. Parkins was apparently the outgoing master. Thomas Battersby, who stayed for four years, went on to Durham in 1667.

We find in 1666 'for beare and tobacco bestowed on Mr. Bell and his scholars in the Rogation Weeke 1s. 10d.' It is to be hoped the tobacco was for Mr. Bell only. Next year the sum of 1s. 6d. was spent for 'ale and cakes' on the scholars. Was ginger hot in the mouth, too? In 1669, 'spent at Mr. Bell's 4d.,' and for 'cakes to the scholars 6d.,' while in 1672 no less than 2s. was spent on 'the scollars in ayle and bread.' From these entries Longstaffe inferred that Bell was the schoolmaster; but from other entries it is clear that he was 'minister,' i.e., vicar, and it was in that capacity that he took the boys round to beat the bounds. Battersby was the headmaster, and in 1666 (p. 242) there was some business over getting an usher, the churchwardens disbursing 'in their severall jorneyes in and about the procuring of an usher for the school and in expences and charges of sending and receiving of letters from Mr. White and others 11s. 8d.' and the usher procured 'received for his wages £4.' The same year Mrs. Colthirst (wife of Robert Colthirst, churchwarden in 1667) was paid 13s. 'for the translating of the schole patten (patent) into

<sup>1</sup> As in Longstaffe, p. 257; nor was John Holthson, gent. schoolmaster in 1657.

<sup>2</sup> Lambeth MSS. Aug. of Livings, 106, p. 423.

<sup>4</sup> Lambeth MSS. Aug. of Livings, 972, p. 387.

<sup>3</sup> This is a common variant for Darlington.

<sup>5</sup> Reg. St. John's, i. 135, 147.



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English.' One wonders whether it was also to this learned lady that 10s. was paid 'for drawing of the orders for the schoole and for getting them presented to my lord' the bishop.

In 1668 Mr. Jonathan Sissent, Sissons or Sisson, as he is variously dubbed, became headmaster, and held office certainly for twenty-nine years, and probably for close on sixty years, since he appears as churchwarden in 1720<sup>1</sup> and headed the Twenty-four in 1734.<sup>2</sup> In 1673 (p. 297) the churchwardens paid him 'for courtesies received 3s. 8d., and on 7 April, 1726,<sup>3</sup> paid him 4s. 6d. 'for 4 tarr barrels' for bonfires on various occasions. In 1688-9 there was some disturbance about the school.

The following items figure in the churchwardens' accounts :—'Lawyer Squire for his fee and drawing the appeale to be in readynesse, £1 10s.; Lawyer Middleton for his fee and order for mandamus, 13s.; Mr. Berry for lawyer Middleton's fee and advice about the Schoole patent under his hand, £1; more to Mr. Berry for his owne care and charge at Durham about the same, being 2 dayes here, 13s. 4d.' The opinion of John Middleton, esquire (counsellor-at-law), 19 March, 1688, has been preserved.<sup>4</sup> It appears to have been directed to four main points: (i.) That the school was not confined to the town, but 'is for the service of the parish'; (ii.) that it was designed for the further instruction of those that can read, and not to teach children to read; (iii.) that the churchwardens had 'absolute power without the concurrence of any others of placing and displacing the master and usher as they pleased, but they must take care to place such persons there as resort to church and otherwise be licensed by the bishop'; and (iv.) that leases must be made by the churchwardens as governors under seal.

In 1693 (p. 457) there was a reference to the ex-master, 'spent with Mr. Battersby about the schoole concerns, 1s.'

In 1705, from a copy of a by-law made in December that year and inserted in the church books, it appears that the school was in a bad way. The churchwardens, 'taking into consideration the low condition that the Free Grammar School is reduced to, as alsoe the severall books awanting and necessary for the use of the said schoole as well as needful repaires, have made a deduction of £8 out of the stipend and sallery of the present Master and Usher, soe that the sallery is to be £33 12s. 11d. for the ensuing yeare.' The total rental for the year was £41 12s. 11d., so they paid Mr. Jonathan Sissons the master and Mr. John Hodson the usher<sup>5</sup> the sum specified and spent on—'2 Coates Dixonaries, 15s.; 1 Skrevelius Lexicon, 7s. 6d.; Littleton's Dixonary bound in calfe, 18s.' In 1707 Mr. Sisson received £29 12s. 11d. and Mr. Hodson £6.

On 14 December, 1714, John Cuthbert, Serjeant-at-law, gave an opinion, dated at Newcastle, to the effect that any three of the churchwardens had power to displace the master, and told them to do so by an order served on him, 'and from that time they may withdraw his salary, and if he refuseth to deliver up the key of the school upon demand, they may pull off the lock and set on another.' If this violent method was adopted to Mr. Sissons it would not seem to have been successful, as he was, as already noted, himself a churchwarden in 1720. He was apparently a layman, as he is described in 1731<sup>6</sup> as 'gent.' He did not die till 1743,<sup>7</sup> but he must have resigned before, as the Rev. Thomas Marshall was 'displaced and discharged' and 'the Rev. Mr. Addison, now usher,' was appointed in his place on 8 December, 1739. On 11 November, 1747, Mr. Cuthbert Allen, B.A., of Hartforth, Yorks. (where there was a small grammar school), was appointed, but 'removed, discharged and displaced' on 5 January, 1748, one of the churchwardens who did the deed being obliged to make his mark through inability to sign his name—a fit person to be one of four governors of a grammar school! Two days later, Robert Cooke, B.A., of Darlington, was appointed to succeed him. The disturbance thus caused was probably the occasion of the making of statutes for the school 23 February, 1748. The headmaster was to be at least 24 years of age, 'duly qualified to teach and instruct youth in the elements of grammar and the Latin tongue, and for encouraging of students in either of the two Universities of this land'; he was to be by preference a graduate. The like qualifications were required in the usher, except that he need be only 22 years old. The school hours were fixed at 7 to 8 a.m., 9 to 11 a.m. and 1 to 4 p.m. in the winter, and to 5 p.m. in the summer. Thursday and Saturday afternoons were half-holidays, which is perhaps the earliest mention of Saturday half-holidays. The ancient immemorial days were

<sup>1</sup> Darlington Churchwardens' Accts. 1696-1767, p. 119 (also Pew Book, 1697, p. 24).

<sup>2</sup> Ibid. p. 176.

<sup>3</sup> Ibid. p. 157.

<sup>4</sup> Printed apparently in 1797, with translation of the charter and other extracts from some lost book or paper about the school by or for James Allan, and quoted in Longstaffe, p. 256. All the remaining history of the school up to 1797 is from a copy of this Allan Tract in the possession of the present headmaster, Mr. Philip Wood.

<sup>5</sup> This appears to be the explanation of the curious mistake Longstaffe made in making John Hodshon, gent., master in 1657.

<sup>6</sup> Pew Bk. p. 45. George Allan, esq., and Jonathan Sisson, gent., sold a pew 13 July, 1731, as executors of William Gibson, deceased.

<sup>7</sup> Longstaffe, p. 257.

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Tuesdays and Thursdays.<sup>1</sup> The 'Vacancies or Breakings up' were 21 days from 24 December, 14 days at Easter, and 28 days at Whitsunday, 'according to the customs and rules of other schools.' The custom of the summer holidays beginning at the end of July is the product of the last half century. The boys were to be 'publicly examined in the books they have read once every year on Easter Tuesday' by the 'upper master,' who was to have 20s. a year deducted from his salary, 'which shall be given and disposed in little honorary premiums or books to such boy in each class as shall appear to have best deserved it by his industry and application.' To prevent 'corporal severity' offences were to be punished with 'small pecuniary fines.' The under master was to be paid £18 a year and 'such voluntary premiums or gratuities as shall be given him by the parents of any children of the said village of Darlington under his care,' the headmaster receiving the net income of the rest of the school property.

The only subject of instruction specifically mentioned is the Church Catechism. The absence of all reference to Greek and the special mention of the elements of grammar seem to show that the illiterate churchwardens had reduced the school to a very low status.

Mr. Robert Cooke was as transient as his predecessors, being displaced on 11 May, 1750, by the four churchwardens, one of whom could not write. Mr. Robert Meetkirke was then appointed, with a new clause, 'for and during so long time as he shall well behave himself in the said place of upper master.' On 22 February, 1755, he was succeeded by 'Thomas Morland, clerk,' who is not stated to be a graduate, and who was not licensed by the bishop till nearly two years afterwards—7 December, 1757. The appointment in 1758 of 'John Dixon of Darlington, gentleman,' to be 'undermaster and usher' seems also to point to a degradation having taken place.

Morland, however, broke the evil tradition of transitoriness by presiding over the school for the probably unexampled period of 51 years. George Allan the antiquary gave the school a portrait of Queen Elizabeth in gratitude for having received his education in the school under him. Morland resigned in 1806. The second master, the Rev. William Clementson, succeeded him. He had 60 boys in 1816,<sup>2</sup> of whom 4 were boarders. The day boys were absolutely free; the boarders paid 40 guineas a year. George Peacock, tutor and mathematical professor of Trinity College, Cambridge, was educated by him—some testimony to the efficiency of the school.

The salary of the second master was raised to £30 a year, and by 1829<sup>3</sup> to £70; the residue of the income from endowment received by the headmaster being from £120 to £130 a year. The fees were: entrance fees, from 5s. to £1 1s. a year; payments for firing, 1s.; Latin scholars paid, 1s. or 2s. 6d. three times a year on breaking up, a customary exaction from 'free' scholars for tuition fees; while those who learnt the three R's paid 7s. 6d.; and those learning 'mathematics and the use of the globes' £2 10s. to £3 a year. There were about 20 boys under the headmaster who learnt classics. A few under the usher learnt Latin grammar, but for the most part the usher's forms consisted of elementary scholars.

The Commissioners of Inquiry remarked strongly on the evil of the governing body, few churchwardens holding for more than two years, with, as a result, no regular meetings of the governors, no minute book, and no accounts, while the land at Thornaby was let at less than its value.

The Rev. J. Marshall, appointed in 1845, held office till removed by a scheme approved by Queen Victoria in Council under the Endowed Schools Act, 7 July, 1874. In 1855 there were 50 boys in the school. In 1865 36, of whom only 12 received more than an elementary education and none learned Greek. As a result of the visit of Mr. J. G. Fitch for the Schools Inquiry Commission a scheme was made by the Charity Commissioners in 1869 establishing a governing body consisting of 6 churchwardens, 2 vicars, the mayor, and 2 members of the town council, and 6 persons named.

In 1872 the Endowed Schools Commissioners found the school in much the same case as at the last visitation—40 boys in all, of whom 2 learned Greek and 16 French. By a scheme of 7 July, 1874, the churchwardens were eliminated, and a body was appointed, consisting of the M.P. for Darlington, 4 members of the town council and school board, and 3 co-optatives, to whom were added by scheme of 13 May, 1896, 2 appointed by the county council of Durham, and 1 by the senate of Durham University. The school was closed pending rebuilding. A new and spacious site in Duke Street, Darlington, was selected, and in 1878 the school was re-opened in the present fine building erected at a cost of over £14,000, of which no less than £11,313 was provided by public subscription. Mr. Philip Ward, M.A., of Edinburgh, where he obtained a first-class in mathematics, was appointed headmaster. There are now five assistant masters with visiting masters for drawing and music. In December, 1890, there were 154 boys in the school, of whom 15 were boarders. It has fluctuated about that number since. The tuition fees vary according to age from

<sup>1</sup> There are still the regular days at Winchester.

<sup>2</sup> Carlisle, *Endowed Grammar Schools*, i. 400.

<sup>3</sup> *Charity Com. Rep.* xxi. 195.



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6 guineas to £14 a year. The following scholarships have been founded since the scheme, so true is it that instead of reforms, as is sometimes alleged, drying up benefactions, by promoting efficiency they attract gifts—the Pease Memorial, 1879; the William Barningham, 1879; the Chapman Ward memorial, 1881; the George Stephenson memorial, 1883; the Thomas Richardson, 1884. The school is more flourishing than it has ever been; but with increasing demands on them modern schools need more money, and with a large proportion of the boys, 36, holding scholarships, the endowment alone, now £175 a year, is insufficient as always.

### HOUGHTON SCHOOL

This school was for a long time the premier school of the county in point of status. It owes its foundation to the public spirit of the most famous of the rectors of Houghton le Spring. In the reigns of Edward VI., Queen Mary, and Queen Elizabeth, the rectory was held by Bernard Gilpin, a nephew of Cuthbert Tunstall, bishop of Durham, for which he resigned the nominally more exalted, but in those times more dangerous, post of archdeacon and canon of Durham. In later times he refused the headship of a college at Cambridge and a bishopric at Carlisle, in order to continue his self-appointed work, which earned for him the title of Apostle of the North, of preaching tours—in these days they might perhaps be called ‘revival meetings’—among the rough mountaineers of Tynedale and Redesdale in Northumberland.

At Houghton itself he seems to have considered that he most effectively advanced religion by setting up a school. In his will he threatened ‘God’s plagues upon all such as seek to withdraw any livings given to the maintenance of his holy gospel, and I trust I may boldly affirme that whatsoever is geaven to a godlie grammar schole is geaven to the maintenaunce of Christ’s holy gospel.’ He started therefore a school, taking boarders into his own rectory-house, an embattled and fortified tower, about 1560. As early as 1569 he was trying to procure endowment for it and to obtain a royal charter.<sup>1</sup> A letter to him from Francis Russell, the first earl of Bedford, 3 May, 1570,<sup>2</sup> informs Gilpin that he had received his letter of 11 April, but that ‘concerning your suit moved at Windsor the troubles that have since happened have been so many and great that no convenient time hath served to prosecute the same, and the bill given in, I doubt, is lost; so that for more surety it were good you sent up another copy and I will do my best endeavours to bring it to pass.’ The troubles were the Northern Rebellion of 1569, when Gilpin’s own house was plundered by the rebels. A year later, 26 March, 1571, the earl wrote:—‘I have moved the queen’s majesty for your school, and afterwards the bill was delivered to Mr. Secretary Walsingham, a very good and godly gentleman, who procured the same to be signed as I think you have before this heard by your brother. Assuredly you did very well and honestly therein and have deserved great commendations. A thing most necessary in those parts is this of all other for the well bringing-up of youth and training them in learning and goodness.’ It was not, however, until 2 April, 1574, that the letters patent were sealed. On the petition of John Heath of Kepier, and Bernard Gylpyne, rector of Houghton le Spring, the queen established in honour of the Trinity ‘a free grammar school and almshouse of Kepier in the parish of Houghton in le Sprynge,’ to consist of a master and usher to be appointed and removed at pleasure by the governing body. The governing body was peculiar. Heath and Gilpin were appointed and incorporated as the first governors for life. Heath and his heirs were to appoint one governor to succeed Heath, and Gilpin and his successors as rectors were to appoint another governor to succeed him. Licence in mortmain was given up to £50 a year.

The school was called the Kepier School because the principal endowment was given by John Heath, who had bought from the crown the endowments of the dissolved Kepier Hospital, the St. Giles’ Leper Hospital outside Durham on the road to Houghton. The endowments given are set out in Gilpin’s will of 17 October, 1582, viz.:—For the schoolmaster (given by Heath), the Gelie Teinde of Bishopwearmouth, i.e. the Gilly tithes, or tithes payable to the Kepier or Gilly of St. Giles Hospital, the road to which is still called Gillygate,<sup>3</sup> £8; pensions out of the parsonages of Ryton, Whickham, and Gateshead, £5 6s. 8d.; total, £13 6s. 8d. For the usher (bought by Gilpin from Heath for £240), from the ‘Gellie Teinde’ of Easington, Chester le Street, Whitburn, Cleadon, and Ryhope, £8; for 3 poor scholars from the same tithes (£1 13s. 4d. each), £5; total, £13. A pension out of Cocker (given by Mr. William Carr), 5 marks, of which 40s. to the poor, £3 6s. 8d.; a pension out of the town chamber of Newcastle (given by Mr. Franklin, Gilpin’s predecessor in the rectory, or a member of his family), £1 6s. 8d.; a pension out of Pensher and Pelowe, £2 6s. 8d.; total, £7.

<sup>1</sup> M. Lewins, *Life of Bernard Gilpin*, p. 467.

<sup>2</sup> Rev. C. S. Collingwood, *Memoirs of Bernard Gilpin*.

<sup>3</sup> The hospital which was conferred on St. Peter’s School, York, in the reign of Philip and Mary was also situate in Gillygate, the street leading to St. Giles’ Hospital there. St. Giles was the patron saint of lepers, and the leper hospitals dedicated to him were generally placed, as in St. Giles at Oxford, some half-mile or more outside the gates of the town on a main road.

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Besides this there was the White House in Houghton, which Gilpin had bought for £15, and a close in Wolsingham for £44, which are mentioned as not 'surely annexed' to the school at the date of the will, no doubt the copyhold cottage and garden in Houghton, surrendered to Heath and Gilpin, 16 January, 1576.<sup>1</sup>

The 'hospital' was not established till after Gilpin's time, except to the extent of the small payments for the poor of £4 6s. 8d. out of the school lands. The school itself was well established before, on 29 May, 1575, William Birche, 'pastor of Stanhope,' gave by will<sup>2</sup> 'to the poorest schollars of the Lattyne speiche in the grammar scholle in Durham and Houghton 40s., to 20 2s. a peice.' On 3 February, 1577-8, at a visitation by Robert Swift, chancellor, for the bishop,<sup>3</sup> Robert Copperthwaite, 'ludi magister,' and Adam Dowson, 'subpedagogus,' appeared in person; and Copperthwaite also appeared as curate there. These, then, were the first masters of the school. Copperthwaite came from Gilpin's Westmorland home, and was a scholar of his old college, Queen's College, Oxford. He did not stay long, as in July, 1578, he appears at a visitation as rector of Ellingham, in Northumberland, a living in the patronage of the dean and chapter, which Gilpin obtained for him. At the date of Gilpin's will, Mr. Christopher Rawson (who has been misread into Ranson) was 'scholemaister,' and 'Frauncis Reisley usher,' and he gave 20s. apiece to each of them. Rawson was a Durham boy, scholar of Christ Church, Oxford, in 1564, and fellow when he took his B.A. degree, 15 October, 1568.<sup>4</sup> Risley had matriculated at St. Edmund's Hall, 20 July, 1578. By the will Gilpin also gave 'to everie scholler dwellinge within my house 3d., to everie scholler of the parishe cominge usuallie to the schole 12d., and allso to schollers of other parishes I gyve to everyone 8d.' Half of the ultimate residue 'I will that it be bestowed in exhibitions upon the schollers and studentes in Oxenford hereafter named by the discretion of my executors to consider who is most needfull.' Nine names are given, one being Francis Reisley, presumably the usher; another George Carlton, Gilpin's nephew, who became canon of Durham and bishop of Chichester, and wrote Gilpin's life; and another Henry Airay, Aray, or Airey, who was a relation of Gilpin and the son of his steward. Gilpin died 4 March, 1583-4, and his will was proved 16 May, 1584.

It is said<sup>5</sup> that 'the earliest and only set of statutes extant bears date 1658, under the signature of Richard Bellasis, then a governor.' In a chancery suit in 1750 Lord Chancellor Hardwicke refused to admit the validity of the statutes produced because they were not signed.

There is, however, little doubt that the statutes, a copy of which is now in the possession of the rector of Houghton,<sup>6</sup> are taken from a draft by Gilpin himself, though in the absence of any seal, and in view of the decision of Lord Hardwicke, they appear to be of no legal force.

They provided that 'when Keeper Schole in Houghton doth want a master, the governors of the said schole may send to Mr. Provost of Queen's College in Oxford, and by letters request him that he would provide some Northerne man in any wise maister of art, either in his own house or some other, learned, and of good life and condition.'

The first duty of the master was to see that 'his scholars frequent divine service on holy dayes, with godly bookes to looke on, and for that purpose he shall read unto them the catechismus Greeke and Latine appointed for all scholes,' and that in church they were not 'troublesome in talkes and jingling.'

School was to begin at 7 a.m., and 'till eleaven of clock none shall depart from thence, either to breakfast or for any other cause, without special license.' 'Item, as he shall orderly read his lessons before noone, so shall he carefully look to the repetitions thereof after dinner, till five o'clock in winter and six in summer. On Fridays he shall take renderings of all the week's lessons; and as they said memoriter and construed nightly before, soe he shall now see them done perfectly, without stopping or stammering, and in every wise at all times marke that one scholler prompt not another. Againe, on this daye he must receive their exercises, be they short or long, and amend the faults in them.'

The master was to have 'no dayes of libertye to go abroad, above 40 in one yeare. He shall meddle with and occupye noe other temporall livings, but be contented with his schole stipend.' He had the letting of the property 'the Gylie tythes,' but was not to let for more than three years, reserving rent enough to make the whole income £20 a year. A curious provision is that 'the maister shall not take upon him the state of marriage unless he have the consent of both the governors in writing under their hands, and the common seale of the schoole, with two justices besides of this county named by the governors. If he proceed with their consent to marry he shall have the White House in Houghton for his wife and children to dwell in . . . soe that all the dayes which he bestoweth upon them shall be reckoned of his 40.'

The usher was not allowed to be married at all, and had only thirty days' absence. 'He shall not be given to wanton company nor to playes,' but to 'spend his leisure conferring with the best

<sup>1</sup> *Durham Endowed Charities*, p. 48.

<sup>2</sup> *Ecc. Proc. of Bp. Barnes* (Surtees Soc.), cxi.

<sup>3</sup> *Ibid.* p. 47.

<sup>4</sup> *Essex's Alumni Oxoniensis*.

<sup>5</sup> Surtees, *Hist. of Dur.* i. 159.

<sup>6</sup> Printed by Mr. Coore, in *Durham Endowed Charities*, pp. 44, 45.



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schollers, of learning, reading of books, and talking of such matters as shall be to both their increase of knowledge, understanding of writers by commentaries, and poets' fables, hard places, examining of grammar rules,' while he is to be ready to help the 'meaner schollers, teaching them on playing days, and after supper the space of an hour to write cypher, and understand their figures.' For the boys 'there shall be but one play day in a weeke, either Tuesday or Thursday, save onely certain days in the spring, and some time of recreation, when the maister shall think it meet for the schollers to exercise their bowes, in matching either with themselves or with strangers in the ox pasture or in Houghton More.'

For holidays, 'they shall not break up school at Christmas, but 7 or 8 days before Christmas Even, and at Easter on Palm Sunday, even soe likewise at Whitsuntide, the Saturday before Holy Thursday; at which time they must pay to their maister every one a penny for Feratutoe silver,<sup>1</sup> and none shall be supposed to give more but upon their owne good wills.' As we saw at Durham, even holidays were to be spoilt if possible. 'Those who stayed in Houghton were to be 'charged and willed to repayre to schoole, that they may be instructed as time requires.'

Though the school was a free grammar school, and no tuition fees were therefore payable, substantial entrance fees were taken. 'It shall be lawful for the maister to take of every gentleman's sonne at his entrance, or of any other that is placed and lodged within the schoole chambers, 3s. 4d., and at the year's end 3s. 4d. more, and after that to be free so long as they shall continue. There were to be five poore schollers and three poore men or women, with an allowance of 7d. a week,'—a penny a week less than William of Wykeham allowed for his scholars in 1400,—'and 7s. over, which may be divided among them.'

There is no evidence whether after Gilpin's death the provision for poor scholars was carried out. Lord Hardwicke in 1751<sup>2</sup> made the curious remark on it, that 'things and times have been altered since that; for though at the Reformation greater invitations were made to bring the poor to schools, that is not so proper now, for at present the poor had better be trained up to agriculture,' a curious view of trusts for a Lord Chancellor. His next remark, 'it would be to no purpose to desire the governors to pay this trifle of 7d. per week . . . for it would not be sufficient for them,' was more to the purpose.

Nor does it appear how far the other statutes were carried out. Anthony Aray who, about to be admitted as master, subscribed and assented to the statutes, 12 November, 1607, was a Queen's College man. But the rest of the masters<sup>3</sup>—Ralph Howden, 24 September, 1631; John Page, 8 December, 1632; George Caunt, 26 April, 1639; Paul Lever, 1682; William Stobart, 1686—cannot be traced as being either of Queen's College or of Oxford. In Caunt's time, which continued throughout the Civil War, from 1652 onwards and up to 1666, a considerable contingent of boys went from Houghton to St. John's, Cambridge, some of whom had come on from Durham School itself; which testifies to the height of its repute. Gilbert Nelson, master from 1698–1722, was a Sedbergh scholar of St. John's College, Cambridge, which was a northern college even more than Queen's College, Oxford, and far larger and richer. Under him was the antiquary Christopher Hunter, who in 1724 placed an inscription on the door of the school recording its foundation. Thomas Griffith, master in 1738, is said by Surtees to have been 'a sound thoroughbred scholar, who restored the school from a low ebb, and left his books to his successors.' He was apparently the master at the time of the chancery suit already mentioned, reported as 'Attorney-General v. Middleton.'<sup>4</sup> One of the grounds of complaint was that he was not duly qualified according to the statutes. But as Lord Hardwicke assumed either that the statutes were never made, or must be presumed to be repealed, this was no objection. The case seems, however, to have drawn attention to the power of appointment by the provost of Queen's, since for the next century all the headmasters were Queen's College men.

Of William Fleming, 1780–1800, Surtees records that to his 'memory the author owes a grateful tribute of respect.' The school was mainly a boarding school, and a good many county families resorted to it.

Carlisle<sup>5</sup> in 1816 found 30 boarders paying 50 guineas a year, a high fee for those days, under the Rev. William Rowes.

In 1827<sup>6</sup> the school was still in a flourishing condition, there being 60 paying scholars, of whom 17 boarded in the house of the headmaster, the Rev. Henry Brown, and the rest in other houses in the town. There were 6 boys on the foundation who were taught elementary subjects free.

In 1842 the school received the only accretion to its endowments since the foundation, in the shape of a sum of £500 raised by subscription for exhibitions to the universities by Dr. John, then headmaster. His successor, the Rev. T. Leicester Balfour, died after only two years' reign, 1852–4. The Rev. George Moulton, who followed, was not of Queen's but of Exeter College, Oxford.

<sup>1</sup> This is apparently someone's corrupt reading for Ferula silver, equivalent to rod money.

<sup>2</sup> *Vesey's Sen., Reports Chancery*, 330.

<sup>3</sup> Surtees, i. 160.

<sup>4</sup> *Vesey's Sen., Reports Chancery*, 329.

<sup>5</sup> *Endowed Grammar Schools*, i. 405.

<sup>6</sup> *Char. Com. Rep.*

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Being unsuccessful, he retired in 1866. The school was then restarted on a lower plane in the hands of Mr. George Taylor, a graduate of London, who had a private school in the place, and to him the school was practically farmed out. He charged £10 for day boys and 35 to 50 guineas a year for boarders. When visited by Mr. Fitch for the Schools Inquiry Commission in 1865 there were 60 boys in the school, of whom 44 were boarders. He found the chief excellence of the school to be rather in its mathematical than in its literary teaching, which, as the mathematics only extended as far as Euclid, Book III., was not high praise. In 1874 the headmaster was the Rev. A. Bennett, who procured an exchange, carried out 24 October, 1888, by which the original White House was given for an extension of the playground adjoining the school. A substantial endowment of £5,000 was given to the school by George Yeoman Heath, a surgeon of Newcastle, by a codicil to his will proved 13 July, 1892, for scholarships to Durham University for intending students of medicine.

In October, 1893, Mr. F. L. Gaul, formerly an exhibitioner of Queen's College, Oxford, was appointed headmaster. He had 20 boys in 1897, and now there are 13, of whom 9 are boarders.

The old buildings, a low two-storied house, form a picturesque feature in Houghton, standing as they do on high ground looking down on the east end of the fine church, in which the monument of the founder is one of the chief features of attraction, and beyond that to the spacious domain of the rectory. But the buildings are not up to modern requirements, and part of them is in ruins owing to subsidence, caused, it is alleged, by colliery workings.

### BISHOP AUCKLAND GRAMMAR SCHOOL

At Bishop Auckland there is evidence of the existence of the collegiate church as early as 1239,<sup>1</sup> when Robert of Courtenay was presented by King Henry III. to the deanery of 'Aclent,' by reason of the vacancy of the bishopric of Durham. On 14 January, 1292, Bishop Anthony Beck made new statutes for the church, the canons having abandoned residence because there were no proper houses for them to reside in. The bishop gave them land on which to build houses and increased the revenues. The head of the college was called a vicar, and the then vicar, Mr. Robert of Alberwyke,<sup>2</sup> now Abberwick, was made first dean, and given a new prebend consisting in tithes of the lands lately taken into cultivation (novalium). There were 12 canons, 5 priests, 4 deacons, and 3 sub-deacon canons, who had to maintain deputies or vicars-choral in their absence. On 28 September, 1428, the 'change of times always going to the bad, and the dearness of provisions,' had again caused the staff of the church to become defective, the stipends fixed by Beck having become wholly insufficient. So the prebends were readjusted, the poorer ones consolidated, the richer ones subdivided, and the stipends of the vicars increased by ordinance of Bishop Langley,<sup>3</sup> leaving the total 12, as before.

There can be no question that a church of this magnitude maintained a grammar school; but if so the school disappeared on the dissolution of the college, and it was not till the reign of James I. that it was revived. Then by letters patent 7 December, 1603,<sup>4</sup> on the petition of Anna Swyfte, the king erected for the instruction of youth in grammar and other good literature, the Free Grammar School of King James within the town of North Auckland alias Bishop Auckland, of one master and one undermaster. The master was to be M.A. or at least B.A., and both were to instruct the scholars in Greek and Latin literature. They were removable at the pleasure of the governors. The governing body of 12 governors named was incorporated; new governors were obliged to be inhabitants of the parish. Licence in mortmain was given to hold lands to the value of £10 a year from Ann Swyfte, and not more than 20 marks, £13 6s. 8d., from others.

Ann Swyfte seems to have been the widow of that name who, on 2 February, 1609, was buried in the cathedral; and was probably widow of Robert Swift, canon of Durham, and for many years chancellor of the diocese. On 12 April, 1605, she endowed the school with a rent-charge of

<sup>1</sup> Dugdale, *Mon.* vi. 1335.

<sup>2</sup> Mr. printed in Dugdale, *Albuwyke*. This person, eminent in his day, has had the misfortune to have his name perpetually miswritten and to be overlooked. He was one of the earliest fellows of Merton College, Oxford, to attain distinction. He has been miscalled Albert when made 'third bursar' of the college in 1276. In 1286 he became vicar of Ponteland. It was too late for insertion in the text, and only in time for an entry on an inserted page xlix that I was able to identify the man whom I had guessed to be dean of Auckland with the fellow of Merton who attained the great preferment of provost of Beverley, 5 June, 1304. *Beverley Chapter Act Book* (Surtees Soc.), i. 27; *ibid.* ii. xlix. and xlix.\* On 28 March, 1306, the usual sequestration order of the Provostry was made on his death. *Ibid.* i. 116.

<sup>3</sup> The account given in Dugdale curiously misrepresents the documents given.

<sup>4</sup> *Rep. of Com. of Inquiry concerning Charities* in 1829; C. C. R. xxi. 38. James I. began to reign 24 March, 1603.



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£10 a year on Ellergill Grange, in Stanhope, and all other lands of Ralph Madison in Ellergill ; and five days later Ralph Madison himself gave another rent-charge of £6 a year from the same lands. It is significant that the schoolhouse is described as built 'near the chapel or guild of St. Anne,' granted 17 April, 1638, by the then bishop, Thomas Morton, subject to a rent to the Crown of 2s. for the purpose. One can hardly help inferring that the old school had been carried on in this chapel.

The original endowment, however adequate at the time, being a fixed rent-charge, was not calculated to produce a very flourishing school. It was augmented in 1625 by a grant of 8 acres of the waste of the manor, and in 1628 by 30 more acres, but the last endowment was lost during the Civil War by being annexed by William Darcy, of Witton Park, whose land it adjoined. Under the Commonwealth the Parliamentary Commissioners for the propagation of the Gospel<sup>1</sup> granted an augmentation to the school in a payment of £20 to the master Ralph Robinson, out of the appropriated rectory of Merrington. But this of course ceased on the Restoration.

In 1807, Shute Barrington, bishop of Durham, purchased a house on the south side of the market place as a residence for the master, then Robert Birkett. In 1814 the Rev. Robert Thompson became headmaster. But under him the school was little more than elementary. When the Commissioners of Inquiry visited it in 1828<sup>2</sup> the income from endowment was only £37 a year. There were 55 boys in the school, but of these only 10 learnt anything more than elementary subjects, the fees charged being 30s. a year for the three R's, and £2 2s. a year for classics. In 1858 the old school was sold for £526 and a new site bought with the proceeds in South Church Road for £40, and a new school erected at a cost of £700. But the new site was only 2½ acres in extent, and the master had contributed most of the cost above the sum derived from the sale of the old buildings. In 1864, when Mr. J. G. Fitch visited for the Schools Inquiry Commission,<sup>3</sup> the Rev. E. Henley, of Trinity College, Cambridge, was headmaster. There was no other master and there were only 15 boys. The fees were £2 a year for boys in the parish, and £4 from outside ; but only 2 of the 15 came from outside. No mathematics beyond arithmetic were taught ; and only one boy, who occupied the highest class by himself, had begun Latin. The low fees, supposed to be a benefit to the parishioners, were the chief cause of the school being low and of very little benefit to the parishioners.

In 1870, Mr. M. K. Limolean, B.A. London, became headmaster and reorganised the school. He at once raised the fees to an average of £8 10s., and so was enabled to pay an adequate assistant, and the instruction given was raised to grammar-school standard. So in two years the numbers increased to 48, of whom 23 were boarders. An application to the Endowed Schools Commissioners resulted in a scheme of 26 June 1873, by which a governing body of 13, including representatives of the Local Board of Health, the Guardians of the Union, the Magistrates in Petty Sessions, and the ratepayers, with 5 co-optative governors, was appointed. The boarding fees were raised from £27 to £40, and the tuition fees were to be £6 to £12 a year. Natural Science was added to the curriculum. In 1877 the buildings were enlarged and improved at a cost of £3,327, of which £500 was given by the Trustees of Lord Crewe's charity, and £1,579 was raised by subscription. In later years the number of boarders had fallen, owing no doubt to the great improvements effected in other grammar schools, such as Barnard Castle and the like. In 1890 there were 50 boys in the school, of whom only two were boarders ; by 1896 the number had fallen to 30, though the standard of education had considerably risen. By an amending scheme under the Endowed Schools Act, approved by Queen Victoria in Council, 13 May, 1896, the governing body was strengthened by 2 representatives of the County Council, who under the Technical Instruction Act, 1889, and the Local Taxation Act, 1888, had funds to spend on education, and of the University of Durham. The school in 1904 was more prosperous than at any previous period of existence. Its endowment, indeed, is not increased, consisting only of the original rent charges of £16 a year, and the rent of £20 derived from the 8 acres of waste, still a grass field ; but a grant of £80 a year from the County Council, and of about £120 a year from the Board of Education enables it to pay its way. The headmaster is Mr. Bousfield, himself educated at the school and at Hatfield Hall, in Durham University, and afterwards an assistant master at the North-Eastern County School, Barnard Castle ; appointed in 1897. Under him the numbers have more than doubled ; as he found 33, and in 1901 had 72.<sup>4</sup> Greek is only learnt by one boy ; but Latin is learnt by all, while science and mathematics form the staple of the instruction.

### THE NORTH-EASTERN COUNTIES' SCHOOL, BARNARD CASTLE

Barnard Castle in 'ancient time' enjoyed the advantages of a grammar school, as appears from the return of the Chantry Commissioners of Henry VIII. in 1546. 'The Gylde of the Trinitie in Barnard Castell<sup>5</sup> :—The said Gylde was founded and endowed with certen landes by gifte of the

<sup>1</sup> Lambeth MSS. Aug. of Livings, 1006, p. 425.

<sup>2</sup> *Char. Com. Rep.* xxi. 38.

<sup>3</sup> *Schools Inquiry Rep.* xix.

<sup>4</sup> *Endowed Charities of the Co. of Durham*, p. 28.

<sup>5</sup> A. F. Leach, *English Schools at the Reformation*. From Chant. Cert. No. 18, 85.

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brethern and other benefactors of the same, of auneyent tyme, to fynde a preste, to be namyd the Guylde preste, to say masse dayly at the 6th houre of the clocke in the mornnyng, and to be resident at Mattens, Masse, and Evensonge, and to kepe a Free Gramer Scoole and A Songe Scoole for all the children of the towne; and to kepe one Obitt yerely for all the Founders and benefactors of the said Guylde, by Reporte.' The net value was £4 os. 12d., which was given towards the maintenance of Peter Coward, priest, incumbent of the guild.

For some reason or other this chantry was not returned as a school to the later Chantry Commissioners of Edward VI. in 1548, and so no provision was made for its continuance, and it seems to have completely disappeared. An augmentation granted during the Commonwealth would, however, appear to show that some sort of a school was kept in Barnard Castle. An abstract of the settlement of ministers made by the Commissioners for Propagating the Gospel in the years 1651-3 shows<sup>1</sup> for [blank] Rose, master of Barnard Castle School, a grant of £19 10s. out of the reserved rent of the rectory of Aycliffe; and by an order of 25 June, 1657,<sup>2</sup> it was directed that the said sum should be transferred and charged upon the tithes of Cold Hesledon and Castle Eden as from 8 January, 1656-7, and paid to Mr. Thomas Hutton, schoolmaster of Barnard Castle aforesaid. It may be, however, that this school was a new creation of the Parliamentary Commissioners, as they did set up many new schools, both grammar and elementary.

The present Grammar School, called the North-Eastern Counties School, was founded only in the year 1877 by the appropriation to education, by a scheme made under the Endowed Schools Acts, of the endowments of the very ancient St. John's Hospital, said to have been founded in 1229 by John Balliol, whose wife founded Balliol College, Oxford. Already in 1535<sup>3</sup> this hospital had sunk into a mere sinecure for a clerical master, worth £5 15s. a year, out of which 3 poor almswomen received 6s. 4d. a year. It continued on this basis, the sinecure master receiving the net rental, for three centuries.

At length a scheme made by the Court of Chancery, 11 May, 1864, when the income from the endowment was £250 a year, provided that after payment of £100 a year to the then Custos, the Rev. George Dugard, for life, and pensions to 3 almswomen, the residue should be accumulated for a grammar school, provisions for the conduct of which were contained in the scheme. These provisions and a later scheme of 17 May, 1877, were superseded before anything was done under them by a scheme under the Endowed Schools Act, approved by Queen Victoria in Council, 3 May, 1882. This scheme consolidated the St. John's Hospital endowment with £30,000 given by will of Benjamin Flounders of Yarm in the North Riding for the 'more general promotion, encouragement, and extension of education within the British dominions amongst classes of every religious denomination (Roman Catholics excepted) either by the promotion or in aid of schools already established or hereafter to be established,' and made the united fund applicable to a North-Eastern Counties School at Barnard Castle. A governing body of 24 was constituted of representatives of the 3 counties of Durham, Northumberland, and the North Riding of Yorkshire, viz. the lord lieutenants, the chairmen of Boards of Guardians, a representative of each Quarter Sessions, 2 representatives of the Senate of Durham University, 1 of the Council of the Science College at Newcastle, and 3 of the Urban District Council of Barnard Castle, and 9 co-optative governors. By an amending scheme of 13 May, 1896, representatives of the 3 County Councils were added.

The school was opened temporarily at Middleton St. George, near Darlington, on 11 September, 1883, with 30 boys, under the Rev. Francis Lloyd Brereton, B.A., of Cavendish College, Cambridge. In 1886 it was removed to its present fine site of now 23 acres, half a mile from the town of Barnard Castle and adjoining the grounds of the famous Bowes Museum. In 1887 Mr. Brereton left for the headmastership of the Norfolk County School. He was succeeded by Mr. E. H. Prest, M.A., a Durham Cathedral Grammar School boy, scholar of Jesus College, Cambridge, 1876, who was in the Cambridge Eight and president of the Boat Club, and obtained a 2nd class in the Classical Tripos in 1880.

The main object of the school was to be a cheap boarding school for farmers' sons and others of like social status in the 3 counties. The fees were fixed at £31 a year, inclusive of tuition, and by the financial ability and admirable management of the bursar, Mr. Edwin Wells, this sum has sufficed to provide for all expenses on a scale of comfort and care for health which the boys of the so-called public schools, paying fees of £100 a year and upwards, might well envy. Mr. Prest died young. In November, 1893, Mr. Brereton, who after leaving the Norfolk County School had been curate of Great Massingham, Norfolk, became headmaster for the second time. The school has now been reorganized on a technical and scientific basis, as what was recently known under the regulations of the Science and Art Department as a 'School of Science,' in which the subjects of instruction are mainly mathematics and science, tempered with a minimum of Latin (4½ hours a week) and French (4 hours), with agricultural and engineering departments.

<sup>1</sup> Lambeth MSS. *Aug. of Living*, 1606, p. 425b.

<sup>2</sup> *Ibid.* 993, p. 252.

<sup>3</sup> *Fulcr. Eccl. (Res. Com.)*, v. 210.



## SCHOOLS

The school in September, 1901<sup>1</sup> numbered 289, of whom 20 were day-boys. The bulk of the boarders came from the 3 counties, viz. 112 from Durham, 66 from Northumberland, 69 from Yorkshire. In 1905 the numbers were 253.

### WOLSINGHAM GRAMMAR SCHOOL

This school was founded, presumably, by William Grimwell, Merchant Taylor of London, who is the first named of eight persons to whom, 14 October, 1612, a parcel of the waste of the manor was surrendered for building 'a common and free school,' while 16 acres called the Batts were included in the same surrender as endowment for the use of a Free Grammar School and a master, to be appointed by the bishop, 'to teach boys in the rudiments of the Christian religion and grammar.'

In 1829<sup>2</sup> the master was the Rev. Philip Brownrigg, appointed in 1821, on the obligation to teach 18 boys free in the three R's and 'classics if required.' The endowment was £55 10s. a year, in respect of £7 10s. of which, arising from gifts by wills of Jonathan Wosler, 3 August, 1789, and George Wosler, 12 May, 1829, he had to teach 4 more free scholars. He had 30 day-boys and about 11 boarders besides the free boys, and 2 assistant masters, one for writing, the other for mathematics. When Mr. Henry Wade was appointed master in 1847, though nominally required to be competent to instruct in classics, the school became wholly elementary, and according to Mr. Finch, reporting to the Schools Inquiry Commission<sup>3</sup> in 1866, bad at that, with 18 free boys in it.

From this deplorable condition an endeavour was made to rescue the school by a scheme under the Endowed Schools Acts 28 June, 1880, which erected a representative governing body of 9, appointed 2 by the vestry (now parish council) of Wolsingham, 2 by the Petty Sessions, and 5 co-optatives, to whom by a subsequent scheme of 13 May, 1896, were added 2 representatives of the Durham County Council and 1 of the College of Science at Newcastle. Mr. Henry Wade was given a pension of £50 a year, which came to an end with his death in the following year. In 1885 the school buildings were enlarged, but unfortunately on the old site, below the churchyard. The Rev. F. H. Coles, M.A., Dublin, was appointed headmaster. On 27 November, 1890,<sup>4</sup> there were 33 boys in the school, 9 of whom were boarders. In 1901 the number had shrunk to 18, of whom 4 were boarders. The tuition fee is £4 a year, with extra fees for Greek or German. The chief achievement of the school has been winning 3 scholarships at Christ's Hospital between 1892-7.

### HEIGHINGTON GRAMMAR SCHOOL

The Free Grammar School at Heighington, which has long ceased to be a Grammar School except in name, was founded at the end of Queen Elizabeth's reign by Elizabeth Jenison, with the endowment of a fixed grant of £11 a year. By deed, 1 October, 1601, she gave a rent charge, which was charged on the lands of George Freville of Bishop Middleham by a deed of a month before, 1 September, 1601, to trustees to 'dispose of the same for the yearly maintenance of such schoolmasters teaching and instructing children within the parish of Heighington in grammar and the principles of the Christian religion, as should from time to time be elected and confirmed according to certain articles thereto annexed.' New trustees were to be appointed by the dean and chapter of Durham. The articles<sup>5</sup> provided that the school should be kept in Heighington in such place as the dean and chapter should appoint. It was to be 'free' for the children of all inhabitants of the parish or born within it, 'paying only 4d. apiece at entering and 2d. quarterly.' For other children 'the schoolmaster might take 2s. apiece yearly, and no more, of the poorer sort; but for rich men's sons and gentlemen's sons such wages as he and they should agree upon.' The instruction was to be 'in the accidence and Lily's grammar, and also in the Greek grammar, and other easy Latin and Greek authors according to their capacities and as the bishop of Durham should direct.' Upon festival days and other convenient (!) times 'writing and accounts were to be taught, and the master was weekly to peruse their writing and cyphering and set them copies, without taking anything other than was above limited.'

The dean and chapter were to appoint the master, and the bishop, or a nominee, was to be the visitor, with power to depose or remove the master on breach of the articles or other just cause, the deprivation to be publicly read in the church during Sunday morning service. The

<sup>1</sup> *Endowed Charities of Durham*, i. 450.

<sup>2</sup> *S. I. R.* xix. 58.

<sup>3</sup> *Char. Com. Rep.* xxi. 88, where they are set out in full.

<sup>2</sup> *Char. Com. Rep.* xxi. 108.

<sup>4</sup> *Endowed Char.* ii. 578.

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master was to receive £10; £1 being paid to the poor of the parish, except when there was a conveyance on the appointment of new trustees, when it was to go in paying the costs.

Presumably the school was started at once, but the Chapter Act Books at Durham are missing at this time, and the first recorded appointment is on 20 July, 1626, 'Graunted to Mr. John Corneford the free schoole of Heighington according to Mr. Thomas Jenison's presentation, which wee doe admitt.' Mr. Jenison was no doubt a son of the foundress. This was repealed 10 August, 1627 when the entry occurs, 'John Corneford, a confirmation of Heighington scholle, by vertue of a graunt from Mr. Jenison.' Cornford or Cornforth is an ancient Durham name. On 17 May, 1643 the dean and chapter sealed 'a graunt of the scholemastership of Heighington to John Appleby.' He was no doubt of the family of John Appleby, of Clove Lodge, Richmond, Yorkshire, admitted from Sedbergh to St. John's College in 1567,<sup>1</sup> and Ambrose Appleby, Fellow of Queen's College, Cambridge, 2 November, 1642.<sup>2</sup>

This school also was augmented during the Protectorate by the Parliamentary Commission for the Propagation of the Gospel in the north. On 29 March, 1653<sup>3</sup> John Hodgson was appointed to be schoolmaster at Heighington, and £10 a year augmentation was granted him, 'parcell of the tithes of Heighington and Redworth.' On 25 December, 1655 Captain William Harrison, the receiver, as £20 was equal to one-fifth of the Heighington tithe, was ordered to pay a fifth, whatever it was, to John Hodson, schoolmaster of Heighington. This was certified to the new commission, 19 July, 1656.<sup>4</sup>

On 10 April, 1697, Meeking Hill was conveyed to the then trustees of the school, out of which £2 9s. was for the benefit of the poor and the rest for the school. On 3 October, 1724 the school-house itself and three fields were leased by the bishop of Durham to the trustees, reserving to the bishop the right of approving the schoolmaster.

The dean and chapter, however, on 20 July, 1770, appointed Robert Machlin master of the Grammar School. Thirty-eight years afterwards the bishop, on complaint that Machlin neglected the school, by a sentence of 26 October, 1808, duly read in church, deprived Machlin. He, however, paid no attention to the sentence. He had, indeed, in 1810, to give up the leasehold land held under the bishop, as the lives for which it was granted had fallen in, while Robert Surtees, the antiquary, who then owned the lands out of which Mrs. Jenison's original endowment issued, withheld payment of the rent charge of £11 a year; but when the Commissioners<sup>5</sup> of Inquiry visited about 1827 they found that Machlin still remained in possession of the freehold land given in 1697, but as a result of their recommendations on 24 January, 1827, he agreed in consideration of receiving £100 for arrears of the rent charge and a pension of £20 a year to give up these.

The school had meanwhile been rebuilt by subscription, and a new master, Thomas Dickenson, appointed. But he was incompetent to teach Greek or Latin, and so the school became, in total defiance of the trusts, elementary.

The commissioners recommended the restoration of grammar teaching at the next vacancy. This, however, would have affected the pockets of the landowners and farmers of the parish, who would have had to find an endowment for an elementary school. The school therefore remained elementary; and the breach of trust was finally legalised by a scheme of the Durham County Court made under the Charitable Trusts Acts, 21 September, 1859.

### NORTON SCHOOL

At Norton there was an interesting example of that for which the Endowed Schools Commissioners were at one time much abused—the appropriation of endowments which had ceased to serve any useful purpose in their original application to the advancement of education.

Norton was one of those large parishes, the living of which, when the country filled up, became too rich for a single parish priest, and was therefore collegiate and divided into seven prebends. To the commissioners on the dissolution of colleges and chantries in 1548 this endowment was thus returned :—<sup>6</sup>

'The parishe church of Norton, having of houselinge<sup>7</sup> people, 700.

'The porcion of tythe within the sayd parishe. Incumbents having the sayd tythes porcioned emonge them to studye at the Universitie : Jerom Barnarde, John Tonstall, Nycholas Thornhill, Nycholas Lenthall, Z. Phillips, Rowland Swyneburne, Anthony Salvin, and Lancelotte Thwayte.

<sup>1</sup> *Sedbergh School Reg.* p. 59, B. Wilson, 1895.

<sup>2</sup> *Lambeth MSS. Aug. of Livings*, 972, p. 387.

<sup>3</sup> *C.C.R.* xxi. 99.

<sup>7</sup> i.e. communicants.

<sup>2</sup> *Reg. of St. John's College, Camb.* i. 66.

<sup>4</sup> *Ibid.* 1006, p. 428.

<sup>6</sup> *Eng. Schools at the Reformation*, 320, from Chan. Cert. 17, No. 19.



## SCHOOLS

'The yearly valewe £48.' This was nearly £7 apiece. As £5 was then good pay for a chantry priest and £3 6s. 8d. was lavish for a University exhibitioner, these young gentlemen were well endowed.

The prebends were in the gift of the bishop, then Cuthbert Tonstall, which no doubt accounts for one of these exhibitors being John Tonstall. The case is interesting as showing that it was not only the Reformers who saw the wisdom of applying the superfluities of ecclesiastical to make up the deficiencies of educational endowments.

The chief mischief of the dissolution of these colleges was that it swept into private pockets vast endowments which might perhaps have been appropriated to education. This seems to have happened at Norton where these prebends disappeared, the exhibitors being pensioned.

### SECONDARY SCHOOLS IN THE COUNTY OF DURHAM

Date of Foundation	School	Founder	Date of Scheme	Number in School 1905
14 July, 1414	Durham Grammar School	Bishop Thomas Langley	—	84
6 May, 1541	" " "	King Henry VIII .	—	—
1416 <sup>1</sup>	Darlington Grammar School	—	—	129
15 June, 1563	" " [refounded]	Queen Elizabeth .	7 July, 1874, 27 June, 1882, 13 July, 1886 and 13 May, 1896	—
2 April, 1574	Houghton le Spring, Kepier Grammar School	Bernard Gilpin, rector of Houghton	—	23
7 Dec. 1604	Bishop Auckland Grammar School	Anna Swift . . .	7 March, 1876, and 13 May, 1896	112
14 Oct. 1612	Wolsingham Grammar School (boys and girls)	William Grimwell .	28 June, 1880, and 13 May, 1896	43
11 May, 1864	Barnard Castle North-Eastern Counties School	Court of Chancery, out of St. John's Hospital, c. 1229; Queen in Council, out of Benjamin Flounder's Gift, 26 Nov. 1845	3 May, 1882, 23 June, 1891, and 13 May, 1896	253
1882 <sup>2</sup>	Stockton on Tees Grammar School	Subscribers . . .	—	71
19 May, 1899 <sup>4</sup>	" " "	Subscribers, 1721 <sup>3</sup>	—	—
1882 <sup>2</sup>	" " Queen Victoria High School for Girls	Subscribers . . .	10 April, 1902	110
24 Oct. 1901 <sup>4</sup>	" " " "	Frank Brown	—	—
26 June, 1884	Hartlepool, Henry Smith School	—	26 June, 1884, 13 May, 1896, and 4 Jan. 1901	—
1884	Durham, Girls' High School	Church Schools Company	—	79
1885	Darlington, Girls' High School	Subscribers . . .	—	89
3 Feb. 1898	Durham, Johnston Technical School (boys and girls)	James Finlay Weir Johnston <sup>5</sup>	3 Feb. 1898	126
1901	Consett Technical School (boys and girls)	Durham County Council, Consett Iron Co. and Subscribers	—	96

<sup>1</sup> Mention in the Almoner's Roll of Durham Priory for this year of a schoolmaster from Darlington temporarily acting as master of the Almonry Grammar School at Durham. Darlington Grammar School is mentioned and was continued by the Chantry Commissioners in 1548.

<sup>2</sup> Formation of Stockton High Schools Company, Limited. Boys' School and Girls' School opened 1 May, 1883.

<sup>3</sup> Founding of the Blue Coat School.

<sup>4</sup> Scheme under the Endowed Schools Acts taking over the Boys' School of the Company and annexing to it the Blue Coat School endowment.

<sup>5</sup> His will giving all the residue of his estate to literary, scientific, or educational objects was dated 15 Sept. 1855. The sum applied to this school was £3,000.

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## DURHAM PUBLIC ELEMENTARY SCHOOLS

**COUNTY BOROUGH OF GATESHEAD.**—By deed of 9 January, 1701, Theophilus Pickering, D.D., gave £300 for a school to be held in the buildings called the Anchorage, in case the Tolbooth, which was then a school, could not be used for the purpose. This school was closed about 1871. Its endowment of £327 5s. 6d. Consols is applied, in accordance with a scheme made under the Endowed Schools Acts, 28 November, 1887, in exhibitions for scholars in any Gateshead Church of England public elementary school. Six exhibitions are given each year in St. Mary's and St. Cuthbert's (Lady Vernon) National Schools. The latter school was built by Cuthbert Ellison in memory of his daughter, Lady Vernon, and enlarged 1868 and 1885, and a boys' school was added in 1891 by Lord Northbourne in memory of his wife, daughter of Cuthbert Ellison. To the Higher Grade Board School, of which the Intermediate and Junior Departments are in Whitehall Road, and the Senior, with science laboratories, technical workshops, cookery school, etc., in Durham Road, Mrs. Sarah Lambert, sister of John Heslop, by will of 5 October, 1885, bequeathed £25 a year for John Heslop Scholarships. This bequest was augmented in 1890 by a gift from Lord Northbourne of £500, and both sums being invested in land leased for £40 a year maintain 3 or 4 John Heslop Scholarships, 2 Northbourne Scholarships, and 1 scholarship in memory of Canon Moore Ede. A School Board was formed under the Elementary Education Act, 1870, on 28 November, 1870, the powers of which are under the Education Act, 1902, now vested in the Town Council. The Public Elementary Schools number 28; of these, 3 are National, seating 1959 (earliest built in 1842); 1 Wesleyan, seating 748 (built in 1862); 3 Roman Catholic, seating 1546 (earliest built in 1862); and 21 Council schools, seating 17,552 (earliest built in 1877).

**COUNTY BOROUGH OF SOUTH SHIELDS.**—A School Board was formed 27 January, 1871. The schools now in existence number 19; of these 4 are National, seating 2,525; 3 Church, seating 1,277; 2 Roman Catholic, seating 1,115; and 10 Council, seating 13,878.

**COUNTY BOROUGH OF SUNDERLAND.**—Part of Robert Foster's Charity, founded 1736, and Edward Walton's Charity, founded 1768, is applied by the Durham Quarterly Meeting of the Society of Friends in payment of fees at Bede Higher Grade School. The Gray School (N.), first established in 1822, has an endowment of £1,000 given by Elizabeth Woodcock, 3 September, 1823; and by deed of 13 September, 1831, the freemen and stallingers of Sunderland covenanted to pay £31 10s. a year to the same school for right of nominating 42 free scholars; this payment is now made by the Sunderland Orphan Asylum. The old school was sold in 1856, and the present one then built. The Bishop Wearmouth School, established 1848, receives £15 yearly from the trustees of the Maritime Institution in respect of Mrs. Woodcock's bequest, by will proved 9 April, 1842, of £2,000 Consols to Church of England Schools at Sunderland and Bishop Wearmouth. The total number of schools now existing is 32: of these 6 are National, seating 3,890 (earliest established 1822); 1 Wesleyan, seating 275 (established 1869); 2 Church of England, seating 662 (both built 1869-70); 5 Roman Catholic, seating 2,402 (earliest built in 1835); and 18 Council schools, seating 22,091 (earliest built in 1866).

**COUNTY BOROUGH OF WEST HARTLEPOOL.**—A School Board was formed 22 March, 1875. The schools number 16. Of these, 2 are National, seating 890; 1 Roman Catholic, seating 1,016; 1 Wesleyan, seating 757; and 12 Council, seating 11,553. They have all been built since 1870, except Seaton Carew School (N.), established 1844, and Church Square School (C.), which was built in 1857 by subscription, and, after 1891, transferred to the West Hartlepool School Board.

## ADMINISTRATIVE COUNTY OF DURHAM

**DARLINGTON MUNICIPAL BOROUGH.**—The old Blue Coat School, founded 19 April, 1713, has an endowment of £1,392 9s. Consols, which is now applied to St. Cuthbert's, St. John's, St. Paul's, and Holy Trinity National Schools. A School Board was formed 13 January, 1871. The schools now in existence number 16; of these 4 are the National Schools mentioned above, seating 2,617 (earliest built, St. Cuthbert's, 1824); 1 Wesleyan, seating 731, established 1857; 1 British, seating 227; 2 Roman Catholic, seating 1,123 (earliest established, 1867); and 8 Council schools, seating 5,102 (earliest built in 1867).

**DURHAM MUNICIPAL BOROUGH.**—The Blue Coat School was founded in or before 1718, and was held in rooms in the Bull's Head Inn in the Market Place. The school was endowed by Jane Finney's bequest, by codicil of 13 January, 1728, of a house in Gillygate, sold in 1799, and now represented by £212 0s. 3d. Consols; and by Ann Carr's bequest of £500, by will proved 6 December, 1748, now invested in land known as Pelaw Leazes, let for £10 a year. The present school site was given by Bishop Barrington, and the buildings were erected by subscription in



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1810-12. St. Giles (Ch.) School, founded 16 January, 1874, was built with £400 from the Gillygate Church estate, which also pays £17 yearly to the school, under Chancery scheme of 28 February, 1866. Under a scheme of the Charity Commissioners of 14 July, 1876, Thomas Cradock's Charity of £532 7s. 11d. Consols is applicable in prizes or bursaries at public elementary schools in Durham. A School Board was formed 15 March, 1871. The schools now in existence number 10: of these, 2 are National, seating 1,377; 1 Church of England, seating 202; 2 Roman Catholic, seating 866 (both established since 1877); 1 parochial, seating 484; a practising school connected with St. Hild's Diocesan Training College for Schoolmistresses, and seating 380 girls and infants; and a Model Boys' School, seating 216 (founded by deed 27 September, 1845); and 2 Council schools, seating 369.

FELLING URBAN DISTRICT.—The schools number 9: 1 Church of England, seating 168 (built in 1815); 1 Roman Catholic, seating 918 (established in 1867); and 7 Council schools, seating 4,289.

HARTLEPOOL MUNICIPAL BOROUGH.—The Crookes Charity School, conducted as a Church of England school, owes its origin to John Crookes, who by will in 1742 gave £24 a year for the education of 24 boys. The gift was void, but was carried out by deed of Anne Crookes in 1755. The school was held in premises leased from the Corporation, until in 1870 the present school site was purchased from the trustees of Henry Smith's Charity. Its endowment now consists of a house and 17 acres of land at Stranton (producing £105 yearly), and a sum of £990 15s. 5d. Consols. Middleton St. John's (Ch. of E.) was founded in 1841, let in 1877 to the School Board for 19 years, and now again conducted by the trustees as a Church school. Prissick Endowed School, founded by John Wells, a devisee of Henry, Christopher, and Elizabeth Prissick by deed of 1835, possesses an income from endowment of £200. These 3 schools seat 1,142. A School Board was formed 11 December, 1883. There are 1 Roman Catholic school, seating 477, and founded 1882; and 7 Council schools, seating 4,257; making a total for this borough of 11 schools.

HEBBURN URBAN DISTRICT.—Formerly included in Jarrow School Board District, formed 24 March, 1871. The schools now in existence number 6. Of these 1 is National, seating 448; 1 Roman Catholic, seating 737; 1 Wesleyan, seating 222; and 3 are Council schools, seating 3,308.

JARROW MUNICIPAL BOROUGH.—School Board formed 24 March, 1871. The schools now in existence number 9: of these 1 is National, seating 767 (founded 1874); 1 Wesleyan, seating 389 (founded 1867); 1 Roman Catholic, seating 1,587 (founded 1890); 5 Council, seating 4,369 (all founded after 1872); and 1 Church of England, Ellison School, seating 783, and founded in 1861, on which Dame Sarah Caroline James spent £4,000.

STOCKTON ON TEES MUNICIPAL BOROUGH.—St. Thomas' School (Council), seating 411, was founded by the trustees of the Stockton Blue Coat School (now the Grammar School), 22 July, 1845. The trustees contributed annually to the support of the school till 1884, at which date they also discontinued a contribution they had made annually to the Trinity Boys' Higher Grade School (National), founded in 1847, which seats 245. The income of £300 Consols, endowment of George Sutton's Charity, bequeathed by will proved 24 April, 1817, for a Female School of Industry, is now paid to Trinity Girls' Higher Grade School (National). Of the 17 schools now in existence, 2, the above-named, are National, seating 576; 1 Church of England, seating 277; 3 Roman Catholic, seating 2,181; and 11 are Council schools, seating 7,997.

## AREA UNDER COUNTY COUNCIL

ARMFIELD PLAIN URBAN DISTRICT.—School Board formed 29 October, 1875. Kyo and Oxhill School Board formed 5 November, 1875. The 5 schools in existence, seating 2,247, are all Council Schools.

BARMSTON.—School Board formed 28 July, 1875. 1 Council School, seating 90, built 1876.

BARNARD CASTLE URBAN DISTRICT.—Of the 4 schools now in existence, 1, Barnard Castle, seating 500, is National, and was founded by subscription in 1813-15; in 1890 new buildings were erected on the old site and on land given by the Duke of Cleveland; 1, Wesleyan, seating 288, founded 1823, was placed upon the trusts of the Wesleyan Chapel Model Deed by scheme of Charity Commissioners, 21 May, 1882, and has an income from endowment of about £56; 1, the Barrington Victoria Infants, seating 182, is British, and was founded in 1837; and 1, St. Mary's Roman Catholic, built 1868, seats 103.

BEARPARK.—School Board formed 1 July, 1875. 1 Council School, seating 444, built in 1877.

BELMONT.—There are 2 schools, both Church of England, viz. Old Durham, Londonderry, seating 285, founded about 1836; and Belmont, seating 336, built in 1869 on a site given by

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the University and Dean and Chapter of Durham. To the Belmont school buildings the Trustees of the Gillygate Church Estate contributed £400, and the school receives about £17 yearly under Chancery Scheme of 28 February, 1866, regulating the Church Estate.

**BENFIELDSIDE.**—School Board formed 11 August, 1876. There are 4 schools; 3 Council Schools, seating 1,521; and 1, Black hill, St. Mary's (R.C.), seating 448, and founded 1880.

**BILLINGHAM.**—There are 3 schools now in existence. Of these, 2 are Church of England, seating 575, and 1 is Roman Catholic (founded 1898), seating 306. Billingham School (Ch. of England), founded 1852, is partly supported by the Dean and Chapter of Durham; in 1898 an addition was made to this school, partly on the school site and partly on the site of the old parish pincfold. A house for the master was conveyed by deed of 22 June, 1899.

**BIRTLEY.**—There are 4 schools, of which 3 are Church of England, seating 897 (1 being private property, *i.e.* the Birtley Iron Works Infants', let under yearly agreement), and 1 Roman Catholic, seating 297.

**BISHOP AUCKLAND** (see also **ST. HELEN'S AUCKLAND** and **COUNDON GRANGE**).—By instructions of Edward Walton on 19 September, 1768, Walton's School (B) was founded out of £500 appropriated for the education of 12 poor children of Bishop Auckland. The school buildings were sold in 1859, and the old Bishop Auckland Grammar School buildings bought 1 October, 1861. The endowment produces about £29 a year. The school, which seats 198, is managed by the Society of Friends. Barrington's School (C. of E.), now seating 370, was built by Bishop Barrington about 1808, and under deed of the Bishop dated 22 February, 1823, shares an endowment consisting now of £11,734 8s. Midland Railway; £7,420 Great Northern Railway; £9,512 North Eastern Railway Stock, with St. Anne's Girls and Infants' School and other schools. The school was conveyed to trustees by deeds of 24 and 25 February, 1823. It also receives £20 yearly for teaching poor boys, and £30 yearly for clothing them from the General Charity of Lord Crewe, under Charity Commissioners' scheme of 31 March, 1896. St. Anne's Girls and Infants' School (National), now seating 707, was founded 20 June, 1833, by the Barrington Trustees. In 1855 the old school was sold, and the present one built. The total number of schools is 5; of the remaining 2, 1 is Wesleyan, seating 340, and built 1858; and 1 Roman Catholic, seating 485, and built 1874.

**BISHOP MIDDLEHAM.**—A Church of England School, seating 197, built by subscription in 1770 upon the waste, minus the endowment given by will of Elizabeth Ambler, 30 June, 1828, now £272 10s. 5d. Consols, for the education of children between the ages of 5 and 14, to be selected by the Vicar.

**BISHOPTON.**—1 school, National, seating 112, built 1813, partially re-built 1896; endowed under the will of the Rev. Thomas Burton Holgate, proved 1 September, 1871, with £446 Great Western Railway 5 per cent. (See also note to Sherburn School.)

**BLACKWELL.**—1 school, British, seating 105.

**BLAYDON.**—A School Board was formed 21 April, 1875. There are 10 schools in existence: 1 National, seating 425; Stella St. Cuthbert's, founded 1854 (there had been a school here in 1832, but it was sold after 1854; and an endowment of £102 Consols, bequeathed by John Mulcaster, by codicil of 14 October, 1832, is applied in aid of the school funds by the Rector of St. Cuthbert's); 1 Church of England, seating 310 (founded 1902); 2 Roman Catholic, seating 705 (first built 1849); 2 British, seating 350, of which 1, Victoria Garesfield, is owned by the Priestman Collieries Company, and 5 Council Schools, seating 3,036.

**BOLAM.**—1 Church of England School, seating 88, built 1894 by Dr. Joseph Edleston, then vicar of Gainford.

**BOLDON.**—A School Board was formed 9 February, 1876. There are 2 schools, of which 1 is National, seating 149, and was built in 1841; this school has an endowment of £210 Consols under the will of Rev. Henry Blackett, rector, who died about 1808. The other, a Council School, seating 208, was built in 1885.

**BOLDON COLLIERY.**—1 Council School, seating 732, built 1878.

**BOURNMOOR.**—There is 1 school, Church of England, seating 507, built 1874, and let by the Earl of Durham under yearly agreement. An Infants' Department at New Lambton was built in 1871.

**BRADBURY.**—A Church of England School, the Mordon and Bradbury School, seating 66, and built 1871–2. Payments in aid of this school are made from the Sedgfield School Endowments.

**BRAFFERTON.**—A National School, seating 71, built in 1823.

**BRANCEPETH.**—A Church of England School, seating 164. Built by Lady Boyne in 1857, is let by Viscount Boyne under yearly agreement. In 1891 it received £6 in respect of Anne Dobinson's bequest of 21 January, 1662, to the ancient school of Brancepeth, which, by County Court scheme of 23 March, 1857, was applied for Dobinson's free scholars in 5 schools. £8 10s.



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is allocated to this school by a scheme under the Endowed Schools Act, 1877, by which Henry Grice's gift for bread to poor people, recited in deed of 25 March, 1668, and now represented by £878 18s. 4d. Consols, is applied to scholarships in elementary schools.

**BRANDON AND BYSHOTTLES.**—There are 7 schools, of which 3 are Colliery schools, *i.e.* Brancepeth New, seating 541, built 1873, and let under yearly agreement by Messrs. Cochrane and Co.; Brancepeth North, seating 726; and Brandon Colliery, which is let under yearly agreement by Messrs. Strakers and Love; of the other 4, 1 is Church of England (Brandon), seating 215, founded 1858, and shares the Anne Dobinson endowment (see Brancepeth); 1 Roman Catholic, seating 307, founded 1878; and 2 British, seating 1021, which were built as Colliery Schools, *i.e.* the Browney School in 1882 by Messrs. Bell Bros. Limited, and the Water-houses in 1863, by predecessors of Messrs. Pease and Partners.

**BROOM.**—The Broom Park Colliery School here is hired from the North Brancepeth Coal Co. Ltd., on yearly agreement.

**BYERS GREEN.**—A National School, seating 456, built in 1843, and subsequently enlarged.

**CASSOP-CUM-QUARRINGTON.**—A School Board formed 11 February 1876. 2 Council Schools, seating 418.

**CASTLE EDEN.**—There are 2 National Schools, seating in all 284, and built in 1866, one for boys and one for girls.

**CHESTER LE STREET.**—There are 3 schools: a National School, seating 1,257, built in 1840, which receives £6 a year under the will of Elizabeth Tewart, proved in 1720; a Roman Catholic School, seating 155, founded 1888; and South Moor Colliery School, seating 292, built 1869, and enlarged 1893, probably maintained by the owners of South Moor Colliery.

**CHILTON.**—There are 2 Council Schools, seating 611.

**COCKERTON.**—A Church of England School, seating 322, founded before 1824.

**COCKFIELD.**—A Church of England School, seating 371, built in 1794, and subsequently enlarged.

**CONSETT.**—There are 4 schools; 1 British, seating 846, built in 1840; 1 Roman Catholic, seating 777, built in 1865; 1 National, seating 809, built in 1875; and 1 Wesleyan, seating 381, built in 1879.

**CORNFORTH.**—A School Board was formed 1 February 1877. There are 2 Council Schools, seating in all 859; Old Cornforth, formerly a National School, founded by deed of 6 January 1864, was, about 1893, let to the School Board.

**CORNSAY.**—There are 2 schools; 1 Roman Catholic, seating 281, built in 1874; and a Colliery School, seating 419, built in 1876, hired from Messrs. Ferens and Lowe on a yearly agreement.

**COUNDON.**—There is a National School, seating 681, built 1841, and subsequently enlarged.

**COUNDON GRANGE.**—The Bishop Auckland Blackboy Colliery School, seating 681, is hired from Messrs. Bolchow, Vaughan and Co. Ltd., on a yearly agreement.

**COWPEN BEWLEY.**—There are 2 schools: Port Clarence, built by Messrs. Bell Bros., Ltd., 1876, seating 247; and 1 National, seating 60, built in 1874, which receive £8 a year from the Poor's Field, under deed of 27 March 1899.

**COXHOE.**—A School Board was formed 12 November 1875. There are 3 schools, of which 2 are Council, seating 552; and 1 is National, seating 410.

**CRAGHEAD.**—A school, seating 710, is hired from Messrs. Thomas Hedley and Bros., on a yearly agreement.

**CROOK.**—A School Board was formed 28 September 1875. There are 4 Council Schools, seating in all 2,540. Of these, Pease's West School was built in 1859 by Joseph Pease, and enlarged 1894. The Crook School benefits under Anne Dobinson's endowment (see Brancepeth). In 1901 the Crook share of this endowment, amounting to £13 6s. 7d., was paid to the Crook School Board and applied in prizes.

**DENTON.**—A National School, seating 108, built in 1874, enlarged 1894.

**EASINGTON.**—A National School, seating 234, receives the dividends on £1,132 2s. 11d. Consols with which the Rev. Richard Prosser, a prebendary of Durham Cathedral, endowed the school built by him about 1814 near Easington Rectory, called Easington Parochial Charity School.

**EAST HARTBURN.**—A British School, seating 101, founded 1875.

**EAST MURTON.**—There are 2 schools: 1 Roman Catholic, seating 252; the other, Murton Colliery, seating 1,449, built and partly supported by the South Hetton Coal Co., who let it on a yearly agreement.

**EAST RAINTON.**—A National School, seating 135, built in 1868.

**EBCHESTER.**—There is a National School, seating 137, built in 1876, and aided by Sherburn Hospital Endowment (see note to Sherburn).

**EDMONDBYERS.**—There is 1 Council School, seating 57, built 1875; a School Board formed 27 July 1874.

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EDMONDSLEY.—There is a British School hired from the Edmondsley Coal Co. on a yearly agreement, built in 1875, and seating 573.

EGGLESCLIFFE.—A National School, seating 145, founded 1839.

EGGLESTON.—A National School, seating 184, founded before 1870, is now lent by T. Hutchinson, of Egglestone Hall, on a yearly agreement.

ELDON.—A Church of England School, seating 500, built in 1870, and enlarged 1879.

ELWICK HALL.—A Church of England School, seating 97, built 1851, and enlarged 1892; receives £3 10s. a year from 'Little Edgemire' part of Miss Elizabeth Allison's Charity, under will proved 12 September 1862.

ESCOMB.—There are 2 schools: 1 Roman Catholic, seating 152, built in 1899, and 1 National, Witton Park, seating 576, built in 1841, and subsequently enlarged, which has 2 school buildings, one built under deed of 29 March 1848, and the other the private property of Bolckow, Vaughan and Co. Ltd.

ESH.—There are 6 schools: of these 1 is National, built in 1836, and seating 52; 2 are Roman Catholic, seating 453, and 3 British, seating 1324. Ushaw Moor (B), seating 405, was built in 1900 by Messrs. Pease and Partners, Ltd., upon their own land.

EVENWOOD AND BARONY.—There are 4 schools here, of which 3 are National, seating 353, (earliest built 1865); while Raneshaw Colliery School was built and is partly maintained by Messrs. Henry Stobart and Co.

FERRYHILL.—There are 2 schools here, of which 1 is Council, seating 370; and 1 National, seating 247, founded in 1847, was built on a site given by the dean and chapter of Durham.

FISHBURN.—A Church of England School, seating 88, founded in 1830, is aided by the Sedgfield School Endowments.

FORD.—There are 2 schools here, Hilton South National School, and a Council School, seating 583, and built in 1875.

FOREST AND FRITH.—There are 2 schools here, Forest of Teesdale National School, seating 126, which probably dates back to the middle of the eighteenth century; and is held from Lord Barnard under a yearly agreement; and a Church of England School, seating 63, and built in 1853, which appears to belong to Lord Barnard and has an endowment of £160 Consols, bequeathed by Robert Bramwell in 1724.

FRAMWELLGATE.—School Board formed 11 May 1875. There are 3 schools here: 2 Council, seating 575; and a National School.

FULWELL.—A Council School, seating 575.

GAINFORD.—A National School, seating 190, built in 1857 and subsequently enlarged; with an income of £14 from endowment given 12 October 1691, by the Rev. Henry Greswold.

GREAT AND LITTLE USWORTH.—School Board formed 20 December 1875. There are 4 schools, 3 Council Schools seating 1074, and a Roman Catholic, seating 230. Susan Peareth by deed of 5 November 1814, gave land and buildings for a school and bequeathed for its support, by will dated 1817, £1,100 Consols. This school ceased in 1880 on the opening of the Board School, and by scheme of the Charity Commissioners of 24 October 1899 the income of the endowment is applied to evening classes, prizes, exhibitions, etc. The old building is used for Sunday School, Reading Room, and the like.

GREAT AYCLIFFE.—There are 2 schools. The so-called National School was built on the waste by subscription in 1745, and subsequently enlarged and endowed with £97 17s. 8d. Consols, representing a gift in trust for the schoolmaster by Codicil of William Bell, 15 January, 1810. The Church Sunday School, held in the National School building, has an endowment of £111 5s. 2d. Consols. The Aycliffe Diamond Jubilee School, seating 112, was built in 1897.

GREATHAM.—A Church of England School, seating 277, built in 1834, with Infants' School, granted by deed of 1836 by the Master and Brethren of Greatham Hospital, was re-built 1878.

GREAT LUMLEY.—There are 2 schools; a National School, seating 220, and built in 1840; and the Lumley Girls' and Infants' School, seating 338, built in 1874 by the Earl of Durham, who lets it on a yearly agreement.

GREAT STAINTON.—There was an Elementary School erected soon after 1745, and was demolished in 1847, when the National School, seating 32, was built. In 1779 Anthony and Isabella Hubbock gave £60 on condition that 4 poor scholars of Little Stainton should be educated in the school. The trustees of Lord Crewe's Charity gave £60 to the school in 1771, and £100 in 1779. These endowments are now represented by a rent-charge of £1 12s. a year, and £290 18s. 2d. Consols.

GRINDON.—Two schools, both Church of England. Grindon School, seating 98, built in 1844 by Frances Anne, Marchioness of Londonderry, and a new school built in 1901, on a site given by Viscount Boyne. The Burton Holgate Grindon Church Charity, with an income of about £12, is applied partly for religious instruction at this school. Wynyard Park School was



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built by Theresa, Marchioness of Londonderry, and is let by the Marquis of Londonderry on a yearly agreement.

**HAMSTERLEY (AUCKLAND UNION).**—An undenominational school, seating 193, built in 1822 by subscription, was enlarged in 1898.

**HARRATON.**—A Church of England School, seating 379, built in 1876 and enlarged 1892, belongs to the Earl of Durham, who lets it on a yearly agreement.

**HART.**—A Church of England School, seating 79, built in 1838 by the first Duke of Cleveland, and enlarged by subscription in 1873 and 1895, is held from Sir Powlett Milbank under lease of 19 June, 1895, for no specified term. Under a scheme of the Charity Commissioners 2 June, 1891, the bequest made by the Rev. Christopher Fulthorpe, by will of 30 June, 1707, now represented by a rent charge of £30 and £45 6s. 5d. Consols, is applied to this school.

**HARTON.**—St. Peter's, Church of England School, seating 105, was founded 1876.

**HASWELL.**—Two schools, a Council school, seating 776, and Hetton South Colliery School, seating 663, built 1838, belonging to the South Hetton Coal Company, by which it is partly supported.

**HAUGHTON LE SKERNE.**—The so-called National School was established in 1768, and £140, then subscribed, was invested in 1808, with £40, bequeathed in 1789 by Mrs. Alexander for the poor, in cottages now let for £8 a year, of which the school receives £6. It was re-built in 1815, subsequently enlarged, and now seats 262.

**HAWTHORN.**—Robert Foster's school at Hawthorn, connected with the Society of Friends, founded 24 November, 1736, was sold in 1865, and the income of the endowment, about £365 Consols, is applied, under scheme of the Charity Commissioners 9 July, 1869, in educating poor children of Sunderland. St. Michael's, Church of England School, seating 132, built in 1863 by R. L. Pemberton, is hired from J. S. G. Pemberton, M.P., on a yearly agreement.

**HEALEYFIELD.**—A Council school, seating 264, was built in 1877.

**HEDLEYHOPE.**—There are 2 schools. A British School, seating 309, was built and founded in 1872 by Sir B. Samuelson and Co., Ltd., and the Hedley Hill Colliery School, seating 209, was built in 1871 by the owners of the colliery, and enlarged 1899.

**HEIGHINGTON.**—An addition to the site of this school, the old Grammar School, was made by the Ecclesiastical Commissioners 31 December, 1878, and at the same time the school was united with the National Society. The endowment, consisting of a rent charge and about 20 acres of land, produces about £47 a year. The school has seating accommodation for 237.

**HELMINGTON ROW.**—There are 3 schools, one representing a school built in 1849, 2 Council schools, seating 668, and Crook's Roman Catholic School, seating 436, built in 1854, and enlarged 1894.

**HETTON URBAN DISTRICT.**—There are 3 schools, 2 of which, the Easington Lane and Eppleton Colliery schools, seating 1,898, belong to the Hetton Coal Company, who let them on a yearly agreement; and the Hetton le Hole National School, seating 1,068, built in 1834. The girls' and infants' departments of this school belong to the company, and are let on a yearly agreement.

**HIGH CONISCLIFFE.**—The National School, seating 87, was founded 1848.

**HOUGHTON LE SPRING URBAN DISTRICT.**—Sir George Wheeler, by will of 23 May, 1719, bequeathed £600 for educating and clothing poor girls of Houghton, Newbottle, and East Rainton. Under Chancery scheme of 23 February, 1850, 24 girls are clothed and educated at St. Michael's National School, which seats 407, and was built 1855. The endowment consists of land producing an income of about £137 and £162 16s. 10d. Consols. There are 4 other schools, a Wesleyan school, seating 294, built in 1861, 2 National, both built in 1872, and seating 1,081; and a Roman Catholic school, seating 405, built 1880.

**HUNSTANWORTH.**—A school, seating 120, built in 1863.

**HUNWICK AND HELMINGTON.**—A National School, seating 450, built on the site given in 1848 by Matthew Bell, and enlarged at different times.

**HURWORTH.**—There was already a school here in 1770, when the inhabitants agreed to build a new school on part of the waste, which was pulled down when, under deed 22 April, 1831, the present National School, seating 232, was erected on a new site. The school has been subsequently enlarged, and is regulated by scheme of the Charity Commissioners of 8 August, 1861. It has an endowment of 11 acres of land, let for £13 a year. The Wesleyan school, founded in 1873, seats 110.

**HUTTON HENRY.**—A School Board was formed 12 October, 1899. There are 2 schools; the Church of England School, seating 153, built in 1871, is hired from R. Burdon on a yearly agreement; the Council School, seating 474, was built 1892.

**HYLTON.**—A School Board was formed 15 July, 1889. There are 2 Council schools, seating 716; of which North School was founded as a National School; was leased to the School Board in 1879.

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INGLETON.—A National school, seating 164. The original building was erected on the waste in or before 1816, and for some time was partly used as a poor-house. It receives some support from Grainger's Charity.

KELLOE.—A National school, seating 184, and built on land belonging to the marquis of Londonderry.

KIMBLESWORTH.—A school, seating 434, built 1878, hired from Charlaw and Sacristan Colliery Co. on a yearly agreement.

LAMESLEY.—There are 4 schools here. Kibblesworth (Church of England) School, seating 242, is hired from Messrs. John Bowes and Partners, Ltd., on a yearly agreement. The Barrington School, Eighton Bank, seating 338, built in 1832, rebuilt 1867, is regulated by the Charity Commissioners' Scheme of 4 May, 1866. A National school, seating 277, built in 1862, belongs to the earl of Ravensworth, who lets it on a yearly agreement; the income of £600, L. and N. W. Railway Ordinary Stock, bequeathed by the Hon. Thomas Liddell, by will proved 10 April, 1856, being applied in books for the children attending this school. The British Bewicks Main Colliery School, seating 165, is hired from C. Perkins and W. E. Manners on a yearly agreement.

LANCHESTER.—A school in Lanchester, part of William Russell's Almshouse and School Charity, was closed in 1899 in consequence of its failure to meet the requirements of the Education Department. There are now 3 schools. The Lanchester Endowed School seats 288, formerly a township school, for which an allotment of land was made in 1781. George Clavering, by codicil of 18 May, 1793, left £265 10s. Bank Annuities for teaching 4 boys until they should be fit for business, and John Smirke left £100 by will about 1812. A new school was built on land given by John Fawcett, and settled upon trust for a Church of England School by deed of 1874. The Hamsteels Church of England School, seating 330, was built in 1872-4. The Burnhope Colliery School, seating 524, built in 1855 and enlarged 1896, belongs to Ritson and Sons, colliery owners, who partly support it.

LANGLEYDALE WITH SHOTTON.—A National School, seating 99, and founded 1858.

LEADGATE has 4 schools. The Iveston Village School, seating 170, was built in 1838; the Leadgate Wesleyan School, seating 247, in 1840, enlarged 1896, taken over by the Wesleys from the Conssett Iron Co. in 1867; the Brooms Roman Catholic School, seating 507, in 1863; and the National School, seating 516, built 1865 and enlarged 1891 and 1900.

LONG NEWTON.—A National School, seating 111, rebuilt 1872, receives aid under the will of the Rev. Jonathan Wilson, proved 16 December, 1885, bequeathing £2,800 Stockton Corporation 3½ Per Cent. Mortgage Bond for religious education in Long Newton.

LOW CONISCLIFFE.—A British School, seating 105, built in 1877 by Mr. Arthur Pease.

LOW DINSDALE.—A Church of England School, seating 30, built in 1851 on land given by Henry George Surtees and Scott Frederic Surtees, receives £3 yearly from Thomas Wyvill's Charity, founded by deed of 21 December, 1675, and the income of £71 19s. 7d. Consols from James Watson's Charity, founded by will proved 3 October, 1844.

LYNESACK AND SOFTLEY.—There are 3 schools here. A British School, seating 110, built in 1839 and enlarged 1897; a National School, seating 269, built in 1852; and Haggerleases School, seating 120, built about 1875 on land provided by Butterknowle Colliery Co., and enlarged 1901.

MEDOMSLEY.—School Board formed 15 November, 1876. There are 4 schools. The Hamsterley Colliery British School, seating 418, built in 1873, hired from the company on a yearly agreement; a Council School, seating 524, built 1879; the Church of England School, seating 279, built in 1887; and a Roman Catholic School, seating 194, built in 1898 by subscription on land given by Miss Surtees.

MERRINGTON.—A National School, seating 159, built in 1868.

MIDDLESTONE.—A School Board, formed 22 June, 1875, built two Council Schools, seating 519, in 1878 and 1879.

MIDDLETON IN TEESDALE.—A School Board was formed 31 January, 1879. The Council School, seating 490, and built in 1891. By deed of 19 March, 1729, lands were given for a Free School, which school was closed in 1875, and, under Charity Commissioners' Scheme of 30 January, 1877, the income from a house and 14 acres of land (producing £36 a year) is applied in scholarships tenable in the higher class of the school.

MIDDLETON ST. GEORGE.—School Board formed 17 October, 1884. A school was built by subscription about 1768, and was the subject of a deed of trust of 11 October, 1782. It was sold about 1871-2, and the proceeds applied to a National School under deed of 28 December, 1871. In 1888 this was closed, and the premises leased to the School Board. A Council School, seating 248, was built in 1871.

MIDDURIDGE.—A Church of England School, seating 197, and built in 1817.



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**MONK HESLEDEN.**—The Castle Eden Colliery school, built in 1844, enlarged 1887, seats 392.

**MOORSLEY.**—A school here is hired from the North Hetton Colliery Co. on a yearly agreement.

**MUGGLESWICK.**—There are 2 schools : a council school, seating 85, built in 1843, and a School Board was formed 27 March, 1878 ; and a Church of England School, seating 60, built in 1852.

**NEASHAM.**—A Church of England school, seating 107, and built in 1867.

**NEWBIGGIN.**—The township school, endowed with £403 8s. 3d. Consols under gift of Wm. Tarn by deed of 18 July, 1799, regulated by Charity Commissioners' scheme of 18 May, 1900 ; was built in 1803, rebuilt 1858, and seats 140.

**NEWBOTTLE.**—School Board formed 4 December, 1877. There are 2 council schools, seating 934, built 1874 and 1880.

**NEWFIELD.**—A National school seating 282, built 1842 and enlarged 1879 and 1889.

**NEWTON CAP.**—There are 2 schools : a Church of England school seating 209, and the North Bitchburn Coal Co. school, seating 395, let on a yearly agreement.

**NORTH BEDBURN.**—There are 3 schools—2 Council seating 530, and 1 Wesleyan.

**NORTON.**—The income of £153 15s. 10d. Consols, bequeathed under will of Ann Hogg 2 February, 1796, for the education of 5 poor girls, is applied, under Charity Commissioners' scheme of 9 June, 1891, to the one school now in existence here, a Council school, seating 920, and built in 1872. The former national school (on the green), built in 1833, is now used for Sunday school and parochial purposes, and a like use is made of the former church day school here, which was founded 10 March, 1848, and closed 1873-4.

**OFFERTON COX GREEN.**—A council school seating 149, was built 1878.

**OLD PARK.**—Binchester Colliery school, seating 350 and built 1877, is owned and managed by Bolckow, Vaughan & Co. Ltd.

**PAINSHAW.**—School Board formed 10 February, 1876. There are 2 Council schools, seating 851.

**PELTON.**—There are 5 schools in existence here ; of these 2 are National, viz., Pelton, seating 275 and built 1850, and Perkinsville, which seats 513 and was built 1859, and is let on a yearly agreement by C. Perkins and W. E. Manners ; the West Colliery school (Church of England), seating 730, built 1865 by Messrs. Joicey and Co. ; the Beamish Colliery school, seating 372, built 1876-7 by the colliery owners ; and Pelton Colliery school, seating 988, built in 1874, let on a yearly agreement by the company.

**PIERCEBRIDGE.**—A Church of England school, seating 60, built 1853 and enlarged 1882.

**PITTINGTON.**—Two national schools, seating 244 and built 1868 ; and Littleton Colliery school, seating 203, built 1874, and let on a yearly agreement by the Lambton Collieries, Ltd.

**PLAWSWORTH.**—The Nettlesworth Colliery school, seating 175.

**POLLARD'S LANDS.**—1 Escomb school (Ch. of E.), seating 337, built in 1840 (infants' school 1195) ; Messrs. Stobart make up any deficiency if the Government grant is insufficient.

**REDMARSHALL.**—A Church of England school seating 72, built by James Pallister about 70 years ago and rebuilt in 1891.

**RYHOPE.**—There are 3 schools here. The village school, seating 367, of which the old building, built by subscription in 1810, was converted into the teacher's residence in 1872, when the old chapel was converted into the school ; the Ryhope Colliery school, let on a yearly agreement by the Ryhope Coal Co., seating 1,105 and built 1861 and 1873 ; and a Roman Catholic school seating 326, built 1874.

**RYTON U.D.**—There are 7 schools here. The Greenside national school, seating 234, was built 1813 ; Hedgefield Colliery, seating 223, built 1866, and maintained by the Stella Coal Co. ; the Ryton (Ch. of E.) school, established in 1826 and enlarged 1901 in memory of the Ven. Archdeacon Thorp, seating 358, possesses under an award of 29 June, 1829, an allotment of 2a. 1r. 27p., and under Charity Commissioners' scheme of 26 November, 1880, the income of the Walker Lawson Endowment, consisting of £60 Consols. Crawcrook St. Agnes' school (R. C.), seating 150, was built in 1886. The Clara Vale Colliery school, seating 298, was built 1898 by the Stella Coal Co., and the Emmaville Colliery and Stargate school, seating 457, is partly maintained by this company.

**SADBERGE.**—A school was built by subscription about 1799 and demolished about 1866, when the site became part of the churchyard. The present Church of England school, seating 95, then erected on a site given by J. W. Pennyman and the Ecclesiastical Commissioners 1865, has endowments of £116 1s. 1d. Consols under will of James Pallister, proved 8 April, 1859, and of £1,217 15s. 9d. Consols, three-fifths of George Buck's charity, subject to Charity Commissioners' scheme of 28 May, 1867.

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**ST. ANDREW AUCKLAND.**—There are 3 schools, South Church National school, seating 376, built in 1848 and partly supported by grants from Bp. Barrington's endowment, a British school, seating 212, built in 1862, and Fyland's Bridge infants' school, seating 115.

**ST. HELEN AUCKLAND.**—A school (British) seating 310, built 1846–8 by Messrs. Pease and Partners, who partly support the school, on land belonging to the late Sir George Musgrave.

**SATLEY.**—A Church of England school seating 104, built 1846 by Miss Elizabeth Greenwell, who gave £350 Consols for its repair and support.

**SEAHAM.**—A Church of England school, seating 1,312.

**SEAHAM HARBOUR.**—There are 5 schools here: Seaham Harbour National school, seating 1,111, founded 1849 and subsequently enlarged, the infants' school of which is hired from the Marquess of Londonderry on a yearly agreement; a Roman Catholic school, seating 463, founded in 1870 by the R. C. bishop, a new school being built 1888; and another Roman Catholic school, seating 169, opened December, 1894, is held under lease of 75 years from the marquess, of whom also are held the 2 other schools, Seaham Cottages, and Ropery Walk, built in 1867 and 1877.

**SEATON WITH SLINGLEY.**—A school seating 93, built 1865 and enlarged 1896.

**SEDFIELD.**—The school (Ch. of E.), seating 332, was built in 1826 upon the site of an old school whose origin cannot be traced, but mention is made in 1707 of the building of a new school. It seems to have been a grammar school by repute, and as late as 1864 something more than a purely elementary school. School and endowments are regulated by the Durham County Court scheme of 10 August, 1858. The endowments of the old school comprise a close of Beacon Hill (origin unknown), a yearly payment from the Howle Hope Charity in respect of the old school stock, and sums of £700 Consols (Lowther's and Bainbridge's Charities), £400 Consols (Wright's Charity), and £340 18s. 2d. Consols (Soulsby's Charity). There is a payment for clothing scholars, and the remainder is spent on the church schools of Sedgfield, Fishburn and Mordon, and Bradbury.

**SHADFORTH.**—The Ludworth National school, seating 283, was built 1849 and enlarged 1883, and Shadforth National school, seating 123, was built 1863 and enlarged 1892.

**SHERBURN.**—By Chancery scheme of 21 December, 1857, the governors of Sherburn Hospital, the yearly income of which exceeds £9,000, may apply £80 yearly for a school in Sherburn House and Whitwell, and £200 yearly for schools in Ebchester, Sockburn, Grindon, Bishopton, Kelloe, Thornley, and Wingate. By Charity Commissioners' scheme of 22 April, 1898, any portion not applied is to be employed in exhibitions for children resident in these places. The governors apply £200 yearly in grants to parochial schools in the places named. There are 4 schools in existence here. Of these 2 are national—Sherburn Hill, seating 170, built in 1845 by the Rev. R. Blenkinsopp, and Sherburn, seating 298, founded 1863, enlarged 1888, regulated by Charity Commissioners' scheme of 29 October, 1878—and the Colliery boys' and Colliery infants' schools, seat 330, built respectively 1862 and 1890.

**SHILDON AND EAST THICKLEY.**—There are 4 schools here. The Old Shildon school, seating 913, founded 1827, belongs to Edward Walton's charities, administered by the Society of Friends, and receives one-fourth of £2,900 invested in mortgage at 4 per cent. The New Shildon school, seating 489, was built by the Stockton and Darlington Rys. Co. in 1841. Shildon National school, seating 719, founded in 1841, possesses a school cottage conveyed by deed of 1846, was built in 1877 from the proceeds of sale of the old school and by voluntary contributions; and New Shildon All Saints' school, seating 522, was built 1872 and subsequently enlarged.

**SHINCLIFFE.**—National school, seating 262, founded in 1841. The old site conveyed by deed of 17 March, 1841, was sold in 1866 for £300, spent on the new buildings erected on land given by the dean and chapter of Durham in 1860.

**SHOTTON.**—A school founded by Edward Walton in 1768, was closed in 1890, and the premises let for £6 a year. One fourth of an endowment of £2,900 administered by the Society of Friends was applied to its support. There is now a Church of England school, seating 188, founded 1898.

**SILKSWORTH.**—A Church of England school, seating 80, was built by the late W. R. Robinson in 1852.

**SOUTHWICK.**—School Board formed 10 January, 1874. There are 4 schools: 2 National schools, seating 1,203 (one built in 1836); a Council school, seating 1,535, built 1878; a Roman Catholic school, seating 227, built 1903.

**SPENNYMOOR.**—An old Freeholders' school, closed in 1869, is now used for public purposes. There are now 8 schools: 2 National, built 1859 and 1869, and seating 1,086; 2 Wesleyan, seating 608, and built 1860 and 1874; 3 Council, seating 1,926 (first built 1875); and 1 Roman Catholic, seating 513, built 1873–5, and subsequently enlarged. Tudhoe School (National) shares



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in Anne Dobinson's charity (see Brancepeth school), from which about £5 a year is applied in prizes.

**STAINDROP.**—One National school, seating 232, was founded 1855, and the infants', seating 75, built in 1847, apparently belongs to Lord Barnard.

**STANHOPE.**—Under Charity Commissioners' Scheme of 3 November, 1891, the Hartwell Lectureship, founded by the will of the Rev. Wm. Hartwell in 1724, is applicable for lectures, exhibitions, etc., for children resident in Stanhope. There is also Bishop Barrington's Charity for the schools of the ancient parish, consisting of £2,957 9s. 8d. Consols, and of school sites at Wearhead Boltsburn, Heathery Cleugh, and Stanhope. This by Charity Commissioners' Scheme of 28 May, 1867, was apportioned equally between 10 schools, *i.e.* Stanhope Boys', Stanhope Girls', Eastgate Boys', Rookhope Boys', Rookhope Girls', Westgate Boys', Westgate Girls', St. John's, Wearhead, and Lanehead. There are 9 schools at present, of which 7 are Council schools. The Westgate school, now seating 242, and rebuilt in 1875, was founded by Richard Bainbridge by deed of 7 April, 1681, and became the girls' school when the boys' school was built by Bishop Barrington in 1819. Under Charity Commissioners' Scheme of 6 April, 1894, there is an endowment of £591 9s. 11d. Consols, applicable for evening classes here, etc., and under Charity Commissioners' Scheme of 17 June, 1898, regulating the Bainbridge Trust, over £20 a year is also applicable for education in Westgate. Frosterley School (seating 160, and rebuilt in 1872) owes its origin to John Hinks, who, by will of 8 January, 1735, gave £120 for a free school. It was built by subscription in 1747 on land given by Thomas Todd, who also, with Anthony Todd and others, subscribed to the endowment, while Mary Todd left £200, and Barbara Chapman, by will proved 1829, gave £6 a year to it. The endowments consist of houses and land, £81 5s. 6d. Consols (Mary Todd's Charity), and £218 3s. 8d. Consols (Chapman's Charity), making an income of £50 a year, applied in exhibitions by a scheme made under the Endowed Schools Acts, 20 November, 1873. The school was transferred to the School Board 10 September, 1891. Rookhope, seating 225, built in 1875, owes its origin to the Boltburn school; was founded at Rookhope by deed of 15 May, 1762, where a second school was built by Bishop Barrington in 1819, and a third in 1861. In 1875 these schools were closed, and an endowment of £591 9s. 11d. Consols paid to the Sunday school carried on in the school of 1861. A scheme has been recently established by the Board of Education for the regulation of the Rookhope branch of the Barrington Trust. Lanehead and Wearhead schools, seating respectively 143 and 162, were built in 1874. The schools established here in 1819 by Bishop Barrington form the Heathery Cleugh branch of the Barrington Trust, with an endowment of £782 3s. 2d. Consols, are subject to a recent Board of Education Scheme. St. John's Chapel School, seating 182, was built in 1875; the former Barrington Day School here, which had an endowment of £295 15s., has been closed for some years. A scheme has been established by the Board of Education for the regulation of the school building and its endowment. South Frosterley Council School, seating 182, was built in 1876. There is 1 Church of England School, Crawley Side, seating 64. Eastgate Mixed School is the private property of J. A. Hilyard. It was built about 1839 and rebuilt 1863, seating 92. The former Eastgate School, part of the Barrington Trust, ceased to be used as a day school in 1890; its endowment of £295 15s. Consols, together with the school, has recently been dealt with by a Board of Education Scheme for regulating the Barrington (Eastgate) School.

**STANHOPE URBAN.**—There are 2 schools: 1 Church of England, seating 420, built 1868 and enlarged 1871, part of the Barrington Trust, which has an endowment of £591 9s. 11d. Consols; and 1 Council School, seating 248, built in 1877 and enlarged 1895.

**STANLEY.**—School Board formed 6 June, 1890. There are 7 schools: 4 Council schools, seating 1,846; a Roman Catholic school, seating 317, built 1872–3, and enlarged 1891; a National school; and the South Moor Colliery School, seating 792, let by the Colliery Company on a yearly agreement, the infants' school built in 1874 and the mixed school in 1901.

**STREATLAM AND STANTON.**—A National school, seating 91, and founded 1854.

**SUNDERLAND BRIDGE.**—School Board formed 31 March, 1875. A Council school, seating 240, built in 1879.

**TANFIELD.**—Under Charity Commissioners' Scheme of 16 June, 1899, a rent charge of £6 a year, devised by Robert Robinson's will 13 January, 1730, applicable for the education of children in the ancient chapelry of Tanfield, is applied in scholarships. The schools now number 7, of which 5 are Council schools, seating 1716, the oldest of which, Tanfield, was built as a National school in 1843, and taken over by the School Board in 1894, and 2 National schools, seating 717.

**THORNLEY.**—School Board formed 23 November, 1875. There are 2 schools: a Council school, seating 606, built in 1876, and a Roman Catholic school, seating 230, founded 1867. Thornley shares in the payments from Sherburn Hospital.

**TOW LAW.**—A Roman Catholic School, seating 578, was built in 1870.

## A HISTORY OF DURHAM

**TRIMDON.**—Henry Airey by will of 1 February, 1680, devised a rent charge of £5 towards maintaining a free school here. It does not appear that any building was expressly appropriated for a school until about 1821, when a schoolhouse was built adjoining the churchyard. About 1862 a new school was built upon the waste. Airey's Charity is applied towards its support, under Board of Education Scheme of 14 July, 1902. This school was enlarged in 1892, and now seats 120. There are 3 other schools: Old Trimdon (R. C.), seating 141; and Trimdon Grange Colliery school, seating 643, built 1843 by the company and enlarged 1880 and 1890; and Trimdon Colliery Girls' and Infants', seating 444, built 1874 by the Trimdon Colliery, and enlarged 1890 and 1901.

**TUNSTALL.**—There are 2 schools: a Church of England school seating 863, built by the Marquess of Londonderry and founded 1876; and 1 Roman Catholic, seating 172, built 1874–5.

**WALDRIDGE.**—A colliery school, undenominational, seating 405, was enlarged 1888 and 1890.

**WASHINGTON.**—School Board formed 17 May, 1890. There are 5 schools in existence: 1 Roman Catholic, seating 410, built 1862; 1 P., seating 220; 2 Council schools, seating 900, built 1892 and 1899; and 2, seating 122, an institution school subject to Section 15 Education Act, 1902.

**WEST AUCLAND.**—There are 2 schools, St. Helen's (Ch. of Eng.), seating 531, originated in a grant by Elizabeth Donald, 2 March, 1789, of a yearly rent charge of £5 for instructing 10 poor girls. The school seems to have been built on the waste of the manor in 1798, chiefly at the expense of Mrs. Margaret Hubbock, who also gave £100 in augmentation of the endowment. By grant of 26 September, 1801, by the bishop of Durham as lord of the manor, the trusts of the school premises were declared. The endowment, including the rent-charge, 2 acres of land, and 2 cottages, produces about £23 yearly. The Etherley National School, seating 299, was built in 1833, and several times enlarged.

**WEST HERRINGTON.**—St. Cuthbert's National School, built 1861, is let on a yearly agreement by the earl of Durham.

**WEST RAINTON.**—There are 3 Church of England schools, seating 999. The oldest of these, West Rainton, built 1850 and 1862, and seating 567, is partly maintained by the Marquess of Londonderry.

**WHICKHAM.**—There are 8 schools here. Whickham Parochial School, enlarged about 1889, and seating 308, was founded as a charity school, 1714, by Robert Thomlinson, D.D., who applied to this purpose a legacy of £100, bequeathed by will of Jane Blakiston, proved 1714; and also by will proved 7 June, 1748, gave certain pews in the parish church and £100 for its support. It is endowed also with £213 12s. 4d. consols, representing an allotment made under an award of 1821, and a sum of £251, North-Eastern Stock, in respect of the charities of the Rev. H. B. Carr and Sir Thomas John Clavering. A School Board was formed 26 March, 1873. A Church of England school, seating 226, was built 1818. There were 2 Roman Catholic schools, seating 569, and 4 Council schools, seating 2,383 (earliest built 1874).

**WHITBURN.**—There are 3 schools here: of these, 1, Whitburn, National, seating 400, and built 1824, and 1, Cleadon, Church of England, seating 127, and built 1830, were jointly endowed by Richard Shortridge, by will proved 7 February, 1885, with £447 12s. 7d. consols. The Whitburn Colliery School belongs to the Harton Coal Co., who let it on a yearly agreement.

**WHITTON.**—School Board formed 23 July, 1874. A Council school, seating 313, built 1877. The former church school, built about 1870, by the late Rev. Wm. Cassidy, vicar of Grindon, is rented by the board as an infant's school.

**WHORLTON.**—A National School, seating 143, built 1848, and enlarged 1870.

**WILLINGTON.**—School Board, formed 3 October, 1877. There are 5 schools here. A National, seating 308, built 1852, which shares Anne Dobinson's Charity (see Brancepeth School) and in 1901 received £13, applied partly in prizes, partly in maintenance of the school. Two British schools, seating 845, Oakenshaw and Page Bank, belong to Messrs. Strakers and Lowe, of Newcastle-on-Tyne, and receive £8 10s. a year in respect of Henry Grice's Charity (see Brancepeth), applied in scholarships; 1, a Roman Catholic school, seating 366, was built 1877, and a Council school, seating 644, built 1880, was enlarged 1893.

**WINDLESTONE.**—A Church of England school, seating 126.

**WINGATE.**—School Board formed 2 February, 1876. There are 5 schools here, of which 4 are Council schools seating 2,056, and 1, Roman Catholic, seating 258. Wingate receives payments from Sherburn Hospital.

**WINGTON.**—The school here was endowed before 1748 by Lord Crewe, bishop of Durham, who gave £70, now £69 14s. 9d. consols, and 22 March, 1844, by deed of Charlotte, countess of Bridgewater, with what is now £304 11s. 4d. consols. The present building dates from 1851.



## SCHOOLS

**WITTON GILBERT.**—There are 4 schools here ; 2 are National, of which 1, Witton Gilbert, seating 308, was founded under will of Jane Finney, dated 14 November, 1728, and has an income of about £14 a year, and the other, Sacriston, seating 369, was founded in 1845 ; a Wesleyan school, seating 320, was built in 1898 ; and a Roman Catholic school, seating 355, in 1866.

**WITTON-LE-WEAR.**—A Council school, seating 196, was built in 1873 by the School Board formed 15 April, 1871. By Charity Commissioners' Scheme of 27 November, 1888, the old charity school, and John Cuthbert's charity endowments, consisting of £851 18s. 6d. consols, are applied in exhibitions to boys educated at public elementary schools in Witton-le-Wear.

**WOLSINGHAM.**—There are 5 schools here, of which 3 are National, seating 791, and built respectively 1845, 1848, 1849 ; the last, Tow Law, on a site given by the Weardale Iron Co., and 2 are Wesleyan, both built 1859, and subsequently enlarged, seating in all 641.

**WOLVISTON.**—School Board formed 8 April, 1875. There are 2 schools : a Council school, seating 140, built in 1876, and a National School.

**WOODLAND.**—The Colliery School, seating 299, was built in 1877 by the owners of the Woodland Collieries, and subsequently enlarged.





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